AMERICAN GAS ASSOCIATION MONTHLY

March, 1933

Announcing

The A. G. A. Rate Service

OWING to the increased number of changes in gas rate schedules throughout the country and the consequent desire of member companies to be fully informed at all times of such developments, the A.G.A. Rate List is to be superseded by the new A.G.A. Rate Service. This will be published in loose leaf form and supplementary sheets issued regularly throughout the year incorporating changes in gas rate schedules. This new rate service should therefore reflect at all times the actual gas rates in effect throughout the country.

The A.G.A. Rate Service will be available shortly after March 15th and will contain the following information:

1. Gas rates in effect on January 1, 1933, together with data on kind and heating value of gas supplied in practically every community in the United States and its Possessions, Canada and Newfoundland.
2. Complete list of gas companies with names of communities supplied by each company.
3. List of gas companies having special rates for water heating.
4. List of gas companies having special rates for house heating.
5. A tabulation showing all communities in which therm rates are now in effect and the names of companies serving such communities.

This new Rate Service will contain 500 pages of accurate, complete and up-to-date information relative to gas rates throughout the country.

Subscription price: To members, $5.00 per year; to non-members, $10.00 per year. One subscription to the Rate Service, including supplements to be issued during the year, will be sent without charge to the accredited delegate of each member company upon request.

Address Orders to

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To Dramatize Gas Service At Chicago World's Fair

THE theme of the Century of Progress International Exposition, which will open in Chicago June 1 will be man's mastery over nature, with science and industry playing the principal roles. This theme fits in admirably with the gas industry's manifold contributions to world progress from 1833 to 1933, which will be effectively portrayed in the Home and Industrial Arts Group of the fair grounds.

The centerpiece of the group will be Home Planning Hall, in which Electrolux, Surface Combustion, American Stove, Bryant Heater and Holland Furnace, have engaged exhibit space from the Fair. The American Gas Association exhibit will also be in this hall. In the immediate neighborhood will be the American Radiator and Johns Manville buildings, and ten model homes.

Above is bird's-eye view of the exposition grounds. In the background are Chicago's towering buildings, while the site of the exposition follows Lake Michigan's shore line.

AMERICAN GAS ASSOCIATION MONTHLY

Allyn B. Tunis, Editor

VOLUME XV | MARCH, 1933 | NUMBER 3

The Gas Industry*

By Arthur Hewitt

President, American Gas Association

FOR many reasons, it was with genuine pleasure that I accepted the invitation kindly extended to me by your Board of Directors to address you on this occasion. The long and distinguished record of the New England Gas Association and its predecessor organization in the service of the industry is well-known throughout the United States and Canada. Often and in many respects it has led the way in organized work for the industry. Your spirit, your enthusiasm, your stability and your qualities of leadership are generally recognized and admired. I expect to refer again to some of your current activities in this connection. I have had the pleasure of attending your meetings in other years and carried away with me the liveliest recollections of your cordial hospitality and of the quality of your meetings and of your membership.

It is also quite well-known that, without particular reference to the gas business in New England, the stability and conservatism of this section of the country have mitigated for you the forces of economic disturbance and have kept you more nearly on an even keel than many other parts of the North American continent.

The gas industry of the United States and Canada has always owed much, and owes much today, to the leaders in New England. Among those who have contributed so freely of their energies and talents for the industry as a whole, one might mention Mr. Dana D. Barnum, a former president of the American Gas Association, who (I say it with pleasure) has just been elected a member of the Board of Directors of the American Standards Association, a Board composed of most distinguished men. Mr. F. C. Freeman, of Providence, and Mr. Walter C. Beckjord are present members of the Executive Board of our national organization and I might refer to a number of others, including Mr. Charles R. Prichard, Mr. Robert M. Leach and Mr. W. A. Doering, who have been members within recent years. There are others too numerous to mention who have also contributed liberally and unselfishly to the common good. No such list, however, would be complete without the mention of Mr. Clifford E. Paige, former president both of the New England Gas Association and of the American Gas Association, who has given us such a splendid exhibition of forceful leadership and who, although no longer living in this section, still talks the New England language.

Any discussion of "The Gas Industry," the topic upon which I am requested to speak, necessarily includes a reference to its statistical situation, although I promise you to deal with very few figures.

Arthur Hewitt

Gas Occupies Vital Position

Revenues from manufactured gas in the United States in 1932 aggregated about $413,250,000, representing a decrease of 5.1 per cent from the 1931 figure. While total sales of manufactured gas to consumers registered a decline of 4.8 per cent, an outstanding exception to the general trend was the increase shown in the use of gas for house-heating purposes. In 1931, sales of manufactured gas for house heating

*Address before the Seventh Annual Business Conference of the New England Gas Association at Boston, Mass., Feb. 16, 1933.

purposes were 19,908,100,000 cubic feet, but during 1932 this figure rose to 20,445,600,000 cubic feet, an increase of 2.7 per cent in this class of business.

A few years ago any business statement showing a loss in sales or revenue would have been regarded as anything but encouraging; but I think you will agree with me that, in the light of the history of business of all kinds during the past three years, such figures as we are now able to present concerning the gas industry are distinctly favorable and encouraging and fully demonstrate the vital position which we occupy as a basic industry.

The technical excellence of the industry, always generally recognized, and inferior to none, has been fully sustained. Our service to the public is unimpaired; our skill in production and distribution has not suffered in the least.

Responding to the request made by the President of the United States and the business leaders who conferred with him immediately after the stock market panic late in 1929, the gas companies of the country not only maintained their full schedule of construction but actually anticipated a very considerable amount of their requirements. It was hoped by all that this would stabilize employment and maintain the industrial activities of the nation. Whether or not this policy, in the light of events, has been shown to be a mistaken one, by reason of anticipating activities that might otherwise have been in progress at this time, does not need discussion here. Suffice it to say, it was believed in by all at that time and the gas industry carried out the obligations undertaken at the White House in 1929 in the utmost good faith.

I would not be understood as saying or intimating that the gas industry does not have to face and deal with immediate problems quite as serious as those of almost any industry. One result of economic conditions has been intensified fierceness of competition and the invasion of the fuel market by those who would seek business anywhere it may be obtainable and sometimes at almost any price. The low selling prices of competing fuels, especially coal and oil, and to some extent electricity, have proved to be real obstacles to the advancement of the gas industry and in many instances a threat to the holding of present business. We may hope that in some respects these prices are temporary and that the pressure of competition from such sources will be relieved in response to the apparent early trend toward a strengthening of commodity prices. We may expect, however, that installations made now on the basis of low cost of competing fuels and certain improvements made in the appliances in which these competing fuels are used will continue for a long time to be factors in the life of the industry.

Industry Ready for Revival

It is obvious that the gas business, with its heavy investments, with its long experience in furnishing the most dependable, most flexible and, for the most part, the most efficient and most economical fuel, cannot afford to disregard these competitive forces. The industry, organized in a national association, and in regional and state associations, with combined forces can do what no one company could well undertake by itself, and has shown adequate realization of the situation which confronts it.

The American Gas Association, for instance, is continuing a considerable part of its research in the industrial field. This has two phases: First the determination of scientific facts concerning heating applications in the industrial world; and second, the development of efficient gas-burning appliances adapted and adaptable to the needs of the consumer. We do not propose to be left behind in the race which will certainly come with a revival of industrial activity. We must be ready, and it is the aim of our Executive Board and of our Industrial Gas Section to see that we are ready.

The activity of competitors in the commercial field manifests itself very largely in an endeavor to take from the gas industry a portion of the load used by hotels, restaurants and bakeries. We have been able to demonstrate that in heavy duty equipment our manufacturers have more than maintained the efficiencies of their appliances and have, in fact, improved them to a marked degree. In straight competition we have little to fear in the field of utilization. When rates are made specifically to get the business, perhaps without regard to the economics of the competing business, it stands to reason that everybody is going to lose and nobody will gain, except for a *temporary* saving to the customer, who in the long run is likely to suffer through the purchase of equipment which may have no permanence or in the impairment of the service given to him and the quality of which service is so vitally important to him.

Credit to Manufacturers

We have not yet solved the problem of the sale in the industrial field of hydrocarbon gases, by-products of other industries, which can be sold cheaply. Service rendered to the customer is sometimes the answer but the complete answer has not yet been ascertained.

In the fierce struggle for business, sometimes at any cost, the field of domestic utilization is also being invaded. Here again our manufacturers deserve credit for constantly improving their appliances so as to afford the highest range of service, of convenience and of safety. We can still supply the best and most modern methods of cooking at the lowest cost unless one considers in the matter of cost comparison a return to the old method of coal stoves, which is scarcely thinkable.

It is not sufficient that we know we can furnish to the housewife and the public restaurant the best and most satisfactory methods of cooking at the lowest cost. We must let them know about it. To this end, and in order to present a united front and to help each other in the industry, the American Gas Association has created a National Directing Committee, composed of leading executives in the natural gas and manufactured gas industry, to correlate thought and stimulate united effort. This Committee is headed by Mr. Conrad N. Lauer, President of the Philadelphia Gas Works Company, and the New England section is represented on the Committee by Mr. Walter C. Beckjord, Chairman of the Commercial Section of the National Association. May I read you the briefly stated objectives of this Committee?

This Committee has already sponsored a course in cooking with gas, which has been offered to the member companies of the American Gas Association, and is receiving widespread approval. The following is a copy of the Resolution adopted at the last Spring Conference and approved by the Exective Board:—

1. WHEREAS, present economic and competitive conditions require more than ever before the carrying out of an aggressive sales policy by the managements of gas utilities without deviation from sound economic principles, and

2. WHEREAS, the domestic cooking and water heating load is the most important factor in the development of the gas business,

THEREFORE, BE IT RESOLVED,

1. That a National Directing Committee of Executives be formed to actively promote the sale and installation of the most modern and efficient ranges and water heaters in the domestic field.
2. That questions relating to competing services of other utilities be referred to that Committee.
3. That under the direction of that Committee there be organized a representative group to sponsor range and water heater development throughout the country with specified individuals in each operating gas company to aid in carrying out agreed-upon plans, and

BE IT FURTHER RESOLVED, that the American Gas Association welcomes and endorses the national advertising project of the Manufacturers' Section and that gas companies be urged to cooperate with the national advertising in their advertising;

That the manufacture and promotion of the most efficient and convenient gas appliances for domestic, commercial and industrial application be recognized and encouraged;

That activities to be promoted by Directing Committee also include:

1. Training of sales personnel.
2. Establishment of Home Economics Services.
3. Encouragement of dealer selling and greater development of utility cooperation with dealers.
4. Application of sound promotional rate structures for development and retention of domestic business as well as commercial and industrial load.
5. Establishing cooperative measures to provide laboratory facilities for manufacturers for research work in connection with improvements in domestic, commercial and industrial equipment.

Preliminary Survey

The Committee has now been authorized to proceed with a short but intensive survey of the situation of the industry to this date upon which to base further activities. The National Directing Committee has also requested and is receiving the earnest cooperation of various other agencies of the Association, including the Committee on Domestic Cooking and the Committee on Domestic Water Heating of the Commercial Section, the Rate Structure Committee, and others. The Executive Board has pledged its full support, and Mr. Lauer and his associates are actively and energetically studying and planning to put into effect methods calculated to hold and extend the supremacy of gas in the domestic heating field.

Obviously, the encouragement and promotion of adequate advertising of the industry will be a prominent feature of the activities of the National Directing Committee. The details have not been and could not be worked out at this time.

Here, I should like to pay tribute to the splendidly conceived plans for cooperative advertising worked out for the Boston metropolitan area, showing again an instance in which New England has taken the lead.

The Association's Testing Laboratory in Cleveland continues its notable record of achievement, and is now ably assisted by the branch laboratory in Los Angeles. Gradually, the requirements which domestic gas appliances must meet in order to receive the Laboratory Seal of Approval are being strengthened so as to insure safety in any ordinary operation and in construction and performance so indispensable to safety and to the satisfaction of the customer. This work carries with it a very considerable amount of research in advance of the formation and adoption of approval requirements, all of which adds to the knowledge of the industry on combustion problems.

At the instance of the Technical Section of the Association, the Laboratory undertook and has now completed a four-year program of research on mixed gases, which has recently been made available to the industry, and which is expected to prove extremely valuable.

These are only a few of the high spots in the activities of the national organization. We regard strong regional and state associations as indispensable, and there is the widest possible field for correlation of the activities of national, state and regional organizations so as to make their combined efforts of the highest value to the individual company and the individual member avoiding any unnecessary duplication of effort. We are happy to know that the New England Gas Association and the American Gas Association are working together in such cordial and friendly cooperation.

One might sum up by saying that "The Gas Industry" has survived three years of depression, with its morale unbroken, its resources not seriously affected, its stability fully demonstrated, and its essentiality fully understood and generally appreciated. The future of any industry of which this can be said is assured.

O. H. Fogg on Ten Utility Boards

OSCAR H. FOGG, vice-president of the Consolidated Gas Company and a vice-president of the New York Edison Company, has been elected a director of the latter corporation. He is now a director of ten companies in the Consolidated Gas group.

London's Streets Gas Lighted 125 Years

One hundred and twenty-five years ago, on January 28, 1933, London's famous thoroughfare, Pallmall, burst into unwonted splendor at dusk, when for the first time in any city gas was used in street-lighting. The boon was due to an enterprising German named Winsor, according to "The London Daily Telegraph." The prejudice against the innovation was all but universal, and cartoonists drew comic pictures of unoffending citizens being choked by the new illuminant. Sir Walter Scott, who was in London at the time, wrote about the madman's scheme for lighting the town with smoke, and even Sir Humphrey Davy gave it as his opinion that it would be as easy to bring down a bit of the moon to light London as to succeed in doing so with gas. The Gas Light and Coke Company continues to light the street—electricity never having ousted gas.

Domestic Cooking Load Is the Bread-and-Butter Of the Gas Industry*

Morse DellPlain

By Morse DellPlain

President, Northern Indiana Public Service Company

GAS is America's highest grade fuel and the business of the gas industry is to render high-grade fuel service.

The main fuel sources of this country are coal, oil and gas, both natural and manufactured. The National Industrial Conference Board has been studying the fuel situation very thoroughly for the past three years and has recently released some figures which are of prime interest to us; they should be particularly interesting to our sales executives.

These figures show that the total consumption of the principal forms of fuel in the United States, exclusive of manufactured gas, will show a decline of about 30 per cent in 1932 over 1929. The consumption of all kinds of coal has declined 40 per cent, bituminous 41 per cent, and anthracite 30 per cent. Fuel oil consumption has fallen off 22 per cent, although the resultant effect on the over-all petroleum figures has been offset to a large extent by a decline of only 1 per cent in motor fuel demand. People apparently still consider the automobile a basic necessity. Natural gas consumption has decreased, according to this survey, from 20 to 25 per cent. This is ascribed to curtailment of operations in the oil fields and to the slump in industrial activity, the industrial load being an especially large factor in natural gas operations. The figures show that the demand for domestic fuel has remained practically unchanged. Unfortunately, the report does not include figures for manufactured gas; however, Paul Ryan, our A. G. A. statistician, has supplied these missing figures. In his October, 1932, report and with adjustments for the change-over from manufactured to natural gas by some companies during the 1929-1931 period, the manufactured gas industry shows a decrease in sales of only 2.5 per cent. In his latest report as of November, 1932, we find that for the eleven months' period, manufactured gas sales had decreased only 5.4 per cent over the corresponding period of 1931. Assuming the same rate of decrease during December, it would seem, therefore, that our manufactured gas sales from 1929 to 1932 have decreased approximately 7.7 per cent, or considerably less than those of our oil or coal competitors. Any industry that has been able to hold up its volume of sales to within less than 10 per cent of the boom year totals and has only lost approximately 7.2 per cent in its gross revenues, is certainly to be congratulated.

Gas—the Superior Fuel

All of this has been accomplished in the face of the most intense competition. Our fuel competitors, with one exception, have had all the facilities readily available to undersell us at every turn. Governed as they are by the law of supply and demand as compared with our inflexible regulatory law of fair return, they have been able to cut prices right and left. Nevertheless, we have been able to hang on to most of our domestic business. This, to me, is *prima facie* evidence of the fact that gas service must be a superior fuel, and that despite the fact that "tomatoes are cheaper and potatoes are cheaper," people really prefer gas service to any other fuel service and will continue to use it so long as they can afford it.

The fact that the demand for our service has held up so well has not been without its unfortunate reactions upon the attitude of the public towards our industry generally, and I am taking this opportunity of bringing it to the earnest consideration of this group of sales executives. The psychology of the times, as it is applicable to the utility business, might be stated as an afterthought to the popular song to which I referred above. People are asking, and from their layman's viewpoint it is a justifiable question, "Because this and that are cheaper, why don't utility rates come down?" It is a most pertinent question. The answer is readily apparent to the experienced utility man but it is equally as bewildering to the customer. We know that our rates never went up in boom times in any measure similar to other commodities. We know that our overall costs have not come down in these days of depression to the extent the layman has in mind. We know that the item of fixed charges, because of the ratio of our investment to volume of business, is by far the largest expense factor in our business. We also know that by the terms of our franchises we must continue to maintain adequate service and extend our facilities, regardless of economic conditions.

Must Defend Rate Policies

Private business can reduce its overhead or expand it at will according to the current business conditions. But, with us, the public must continue to be served and to do this a constant incoming of new capital into our business is a life and death matter. The

* Address before the Mid-West Regional Gas Sales Conference, Chicago, Ill., Feb. 14, 1933.

cost of this capital to us is dependent on our credit, which in turn is based on our earning capacity. The public policy theory, whereby the public utility business is subjected to strict regulation, clearly recognizes the fact that our rates are not expected to vary from day to day with the vagaries of the law of supply and demand. As a matter of fact, during the boom years, rate reductions were made, from time to time, voluntarily for the most part, but these reductions were possible only on the hypothesis that the revenue lost through the reduction was recoverable within a limited time through additional business induced by the lowered rate.

There is ample evidence that in these days, the business is simply not there to compensate us for the rate reductions which the public is demanding. With an average domestic gas bill of $3 per month, a 20 per cent reduction in rates would effect a saving to the customer of 60 cents a month or 2 cents daily. With the fuel and light bill already the smallest item on the family budget, the actual effect of a reduction of 20 per cent in the gas bill would seem infinitesimal to the customer, and yet I know that there is not a gas company represented here this morning that could cut its rates anything like 20 per cent and remain solvent.

Because of their continued public contact and the potential educational punch contained in the personnel of our sales departments, every member of that department should be thoroughly versed in these elementary economics of our business and be prepared to defend his company's rate policy whenever and wherever he hears the argument raised by the layman. It is, of course, the duty of all employees, operating or otherwise, in the true spirit of loyalty, to "sell" his company to the public, but with the salesman it bcomes a most essential part of his job. He should be familiar not only with his rates, but also with the "why" of these rates.

For many years, the gas industry has striven hard to secure the adoption of sound promotional rates. It certainly would be a most unfortunate step backwards if, as a matter of ill-advised expediency, we should depart from the very fundamental principles of our business on the theory that we must conform to the whims of uninformed or selfish interests. What are these fundamental principles that I have referred to? To make myself more explicit I will borrow some terminology from our brothers in the operating department.

The men who founded our business and they who have developed it to its present status, invested their millions of dollars on the one fundamental principle that the acquisition of certain classes of business would be inevitable. When we were gas lighting companies, our gas men knew that candlelight and oil lamps could do the job cheaper. They went ahead, however, because they knew that people would use gas for lighting because it was better and well worth the extra cost. Most of us can remember the development of the electric incandescent lamp and the replacement of our "base" lighting load with the cooking load. It took the electric lamp to make us realize that our scope was really selling a fuel service. This realization gave the gas business a new impetus and generating plants were built, distribution systems laid and extended on the well-founded supposition that despite the coal, oil and wood ranges which were cheaper to operate, people would cook with gas, notwithstanding the extra cost, because it was the logical fuel and much superior to any other.

Bread-and-Butter Business

In other words, the gas business is founded on the theory that its investment can be justified by the acquisition of what might be termed "base" load. The domestic cooking load is the gas companies' "base" load. It is the bread-and-butter of our business.

Having made an investment and with most of our fixed charges taken care of by our cooking rate, we are, theoretically, at least, in a position to go after what might be called "increment" load. This is the business which, because of competitive conditions, must be obtained on a purely competitive basis. I have in mind such load as domestic water-heating, refrigeration, incineration, clothes-drying, home-heating and home-cooling. This is truly "increment" load. Our promotional forms of rates recognize the basic feature of the cooking load and the increment nature of these other uses to which gas can be applied. It is very obvious that the stronger our "base" load revenue happens to be, the more favorably situated we are on a price basis to meet our competitive fuels in the water-heating, refrigeration and home-heating fields. Vice versa, weaken our "base" load revenue and we make it harder for ourselves to compete for the "increment" business. This automatically affects our ability to continue to serve equitably our base load customers. The gas consumer is directly interested in the gas industry being able to build up its "per meter" domestic consumption. The economics of the business are such that in this way only can adequate gas service be maintained economically.

As a combination man I am greatly interested in the strenuous efforts being put forth by the electric people to capture the domestic cooking load. I can understand their viewpoint, but I cannot agree with it, at least as far as the combination company is concerned. In the electric business, the base load is lighting and small power applications, such as clothes washing, vacuum cleaning and food-mixing. The cooking load is very definitely "increment" load. To the combination company, the idea of trading the base load of the gas utility for the increment load of the electric is fraught with the utmost danger to the gas utility without offering the combined operation anything to offset the inevitable losses in the gas end of the business.

Consider Effect on Consumer

Allow me to repeat here what I have said publicly many times before. "After a very careful study of this particular angle of our business, I am firmly convinced that very definite policies should be adopted by the management of combination properties looking toward the protection of the base load of each class of service and that the aggressiveness of the sales effort should always be directed toward building up the increment load." Since I first made that statement I have found no reason to change my views on the subject. In fact, the more I study the situation the more convinced I am of the soundness of that position. In our company, we made a very careful study of the economic effects of electric cooking at

various degrees of saturation in a particular combination district which was doing just about as good a job as we had a right to expect, from an earning viewpoint, on both utilities. I wish I had the time to give you the details of the study for they are mighty interesting. You have my assurance, however, that it required a very low electric range saturation to play havoc not only with the gas utility, but with the combined earnings of the district, and with no resulting benefit to either the gas or electric consumers. No utility policy can be properly determined without fullest consideration being given to the ultimate effect on the consumer.

In talking to a group like this, it would be a mistake to overlook one of our greatest present-day problems, namely, the public agitation on the subject of political ownership and operation of utilities. It must be admitted that the threat is more imminent in the electric field than in ours. The gas business is too complex and not so easy to make a success of as is the electric, thus it does not arouse the interest of the politicians, notwithstanding the fact that attacks on gas rates are as common, if not more prevalent, than the others. We in the gas business should not hesitate to fight this political ownership menace at every opportunity. The principle of private ownership of all utilities is at stake. The fundamental of whether our government should engage in business which private enterprise has developed, is the real issue. It might only be a small power plant in a small country town or the Muscle Shoals development itself, but in each and every instance it is a further entrenchment of the effects of bureaucracy in our daily lives. The best government is that which governs least and this democracy of ours flourished and became the greatest industrial and wealthiest nation in all the world, so long as our own political leaders were content to govern and leave business to solve its own problems and work out its own destinies.

Urges All to Meet Onslaught

From my own observations of the government in business—any business, if you please—there is nothing but a record of inefficiency, wastfulness, and lack of initiative in its wake. Theoretically, its advocates urge it as a "cure-all" for the ills of the particular business they have in mind. Those who are sincere, wilfully blind themselves to the record and bank everything on a theory rather than on an experience. Other advocates are frankly selfish. They see in political ownership and operation of a utility more sources of patronage which is the fountain of all political strength. The great mass of voters, their ears full of political nostrums and their newspapers belaboring a utility story for its news value, are ready converts to any promise that offers them a change for the better. Admitting that our industry may not be entirely blameless, but maintaining that it is nowhere near as guilty as those who are attacking it so viciously would have the public believe, I urge the active participation of all of us in meeting this onslaught. Self-interest, if nothing else, should put you sales executives into the battle.

There might be, in competitive situations, an inclination to see the electric utility taken over by the politicians on the theory that their very ineptitude would lessen your competition. This is a mistaken point of view. Your competition in reality will be increased, as it will be far less intelligent. The private electric utility, after all, must make money, whereas under political control that detail is usually of secondary importance. The matter of political ownership, I realize, is a subject in itself. I mention it here merely to call to your attention the need for prompt and concerted action within our own ranks to offset misleading propaganda. It is a phase of the present economic era and much of it is hysteria aggravated by selfish politics. It has been my experience that the average American is willing to listen to reason if we will very frankly lay our cards on the table and talk well-informedly on the subject.

The fact that your program devotes an entire session to the subject of "Trade Relations" is ample evidence that the importance of gaining the help and cooperation of these dealers who are our logical trade allies is very much to the fore in the Middle West. Last year you extended me the privilege of discussing this subject from an executive's viewpoint. At that time I endorsed the A. G. A. Principles of Cooperative Merchandising. I also advocated the broadening of the field to give all manufacturers of quality equipment and all eligible dealers a greater opportunity in our territories, by eliminating those forms of our competition which smother honest effort on their part. It may mean a curtailment in retail merchandising profits, but we are in business primarily to sell gas. All good gas appliance manufacturers have sales promotional plans which, with dealer effort, should produce a profit for the manufacturer and the dealer, and must produce added load for us if we encourage them to come into our territory and carry on aggressively without having to meet the competition of a utility salesman whose compensation is based on his having to sell a certain "gadget" to eat regularly. I am glad to know that the question of a proper appliance salesmen's compensation plan is now receiving the attention it deserves within the industry. The total of approved load building units actually connected to the mains, whether sold by dealers or ourselves, is, in my opinion, the only proper measuring stick of the effectiveness of our sales policy. To complete a sound cooperative dealer program there remains only the broadening of the field to include all reputable manufacturers of quality gas appliances, thus giving them a wide open opportunity to sell their products profitably in our territory. It is to be hoped that this one remaining factor will soon receive general acceptance.

Our progress as an industry is dependent on our ability to continue selling our product in ever-increasing volume. Much of our present strength in the fuel field is due to the ability that you men have exerted in keeping our product sold while other business was receding. For a while longer, keeping it sold will be a major part of your job. But when the sun of prosperity creeps through the clouds again, we in the industry will look to you to speed our recovery. These sales conferences are a very definite part of the speeding process. I congratulate you on your foresight in preparing yourselves now.

Summer Air Conditioning With Gas Heat Energy—

A REPORT ON A GROUP OF RESEARCH RESIDENCES

By Eugene D. Milener

IN the development of any new service that it is desired to put to general use, two things must usually be done. First, following the development of a process, a device or apparatus must be built that will, from a mechanical standpoint, accomplish the desired end and second, a certain amount of field work must be done to test out the device and process under practical conditions. This second stage involves not only actual observation of the new apparatus for the purpose of correcting mechanical defects and collecting engineering data, but should also be utilized to secure a reaction of the ultimate users to the hopes and claims of the scientists, engineers and others responsible for the apparatus. Engineering history is full of instances where, from the engineer's standpoint, splendid processes have been worked out and appropriate apparatus devised for interpreting these processes. Unfortunately, in some instances the engineer's hopes have not been realized. Among other reasons may be ascribed a failure to fully adapt the equipment to the public tempo, or to the public purse.

The unusual efforts that have been directed recently toward air conditioning in all its phases are familiar to most people. No one can accurately measure the total amount of thought and effort that have been expended toward analyzing and projecting the problem, experimenting with equipment, and manufacturing suitable apparatus. In so far as industrial and commercial year 'round air conditioning is concerned, and in so far as residential air conditioning in the winter is concerned, the entire development has been carried through to the point where it is commercially acceptable. In other words, research has projected and developed a series of processes; manufacturers have built suitable equipment; this equipment has been installed and operated under the conditions it was designed for; the public has liked it; found it can afford it and has therefore bought it and put it to use.

The situation with regard to summer air conditioning of whole residences with gas heat energy or with other forms of energy has not quite reached that stage. Rather, it has reached the stage where research has brought into being several possible methods of conditioning whole residences; engineering has designed certain apparatus and controls, and a limited number of plants have been built. This all represented the work of scientists, engineers and manufacturers —that body of men who are primarily interested in creating and producing the service of summer air conditioning to whole residences. Work in that direction, however, will be valuable only to the extent that the public accepts the proffered service because of its intrinsic worth and also because the appeal to continually use it is strong enough to cause the public to willingly allocate a part of its income to pay for the service.

The purpose of this paper is to report on a series of tests that were conducted under the supervision of the Committee on Industrial Gas Research of the American Gas Association, of which F. J. Rutledge, of Philadelphia,

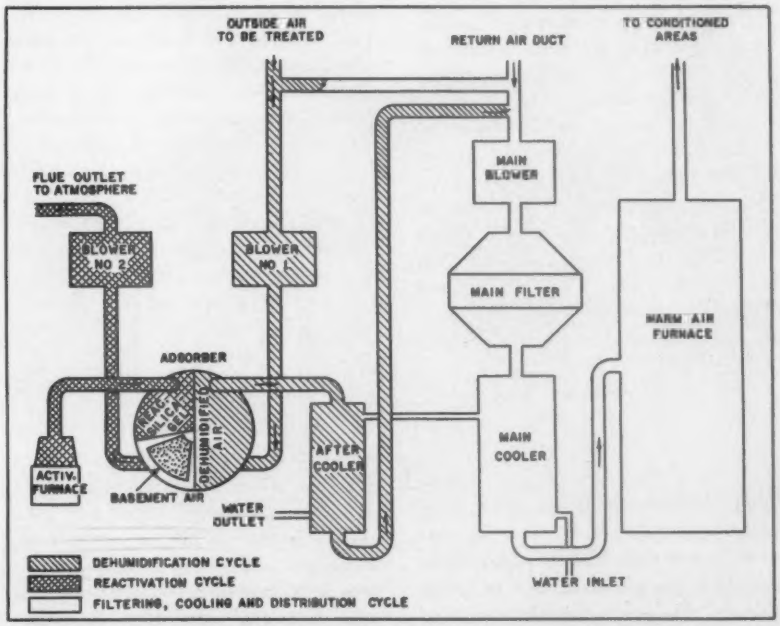


Figure I
Flow Sheet of Silica Gel Residential Gas-Operated Summer Air-Conditioning System

Pa., is chairman, to determine the cost of completely conditioning whole residences in the summer and to secure as far as possible the reaction of typical home owners to the service rendered and to secure operating data and operating experience with automatic, central, residential, gas-operated summer air-conditioning plants.

There are at least seven possible methods whereby gas heat energy can be converted into a summer air-conditioning effect, and each method can be interpreted by a number of mechanical systems. It will take some years before they can all be run down to determine the ultimate practicability and worth of each. The method used in the test houses is that known as the solid adsorbent method and Silica Gel was the solid adsorbent used, the machines used having been developed around the properties of that material.

Figure 1 shows diagrammatically the operation of the equipment used in all of the test houses except Dallas. A more detailed description can be found in the report of the House Heating and Cooling Committee of the Commercial Section (October, 1932). Figure 2 is a flow sheet of the plant as installed in the Dallas house. In this instance, it will be noted, the use of tap water has been eliminated and water towers substituted.

The tests were conducted in various localities so as to get as far as possible a cross section of weather conditions and habits of living. The dwellings utilized are owned and occupied by typical American families who, except in one instance, had no connection with any organizations interested in air conditioning. Two of the houses are located in Chicago, and one each in Pelham, New York, Dallas and Baltimore. In each instance the local gas company serviced the installations and collected the data.

One of the objectives was to conduct the tests with summer conditioning apparatus that was capable of operating from the same supply of fuel from which the winter air-conditioning plants operated. At the time the tests were started there had been developed and built one system capable of doing this and this system was therefore used in the field tests. This system is the Silica Gel dehumidifying system. Since

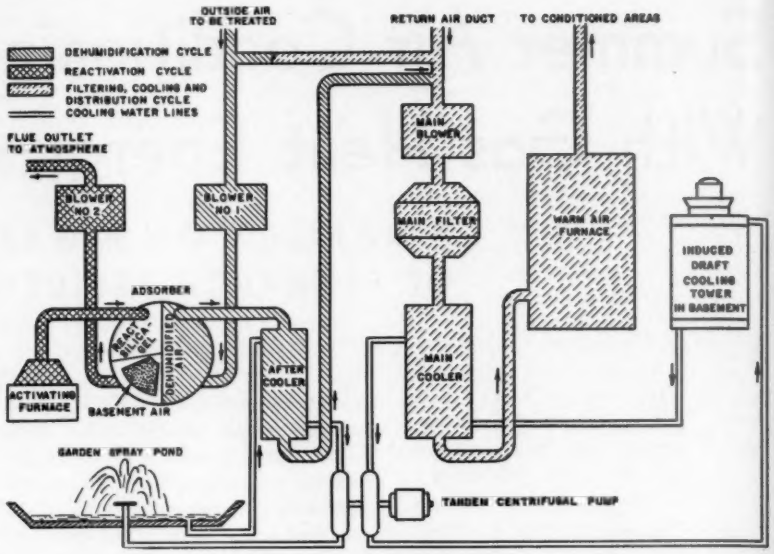


Figure II
Flow Sheet of Silica Gel Gas-Operated Residential Summer Air-Conditioning System Using Water Tower

the tests were begun, several other systems have been brought to the point of practical application, notably those based on the use of steam jet vacuum refrigeration. Considerable progress has also been made toward perfecting other dehumidifying systems for residences, using both solid and liquid adsorbents.

The air-conditioning plants were operated in the five dwellings during the past summer, and in two of the same dwellings during the previous summer. Test data was collected for varying periods. The apparatus is shown schematically in Figure 1 and Figure 2.

A summary of the data collected is shown in Table 1.

In studying this data it should be remembered that the chief objective was to let the owners of the houses operate the plants as they desired, bearing in mind their own comfort and their own conception of the desirability or undesirability of utilizing this type of home service. The Baltimore house was the exception. The rather short period covered by the data presented from this house represented a few days during its operation as a display house. While not actually occupied as a dwelling at that time, it was in charge of a competent hostess who simulated conditions of family occupancy as closely as possible.

The dwellings are typical average size buildings ranging from 19,700 cu.ft. to 24,000 cu.ft. in size. They are in each instance heated automatically by means of gas-operated central warm-air heating plants, with forced circulation, air filters and humidifiers. In effect, they are fully air conditioned in the winter and the owners are persons who are entirely cognizant of the advantages of having their homes air conditioned in the winter and regularly pay the cost of this service as determined by the local utility rates.

Due to a number of conditions, including late installation, it was impossible to secure a full, normal use of the plants throughout the summer. When the tests were first projected, it had been hoped that complete data could be secured, thus recording what would be valuable and authentic data as to the number of hours usage that could be expected, per summer, of summer air conditioning when installed as an integral part of a complete year 'round home air-conditioning service.

From the data collected, however, it is possible to observe the hourly operating costs under different conditions. This varies from 14.03 cents to 34.60 cents. If the Westchester house is excluded because of the unusually high water rate, the hourly cost would range from 14.03 cents to 17.2 cents.

The gas, water and electric rates are not the same in any of the localities

TABLE I

AMERICAN GAS ASSOCIATION—COMMITTEE ON INDUSTRIAL GAS RESEARCH

Gas-Operated Silica Gel Whole House Summer Air Conditioning
Summary of Data Collected in Occupied Residences

	Chicago No. 2 House 1932	Chicago No. 1 House 1931	Chicago No. 1 House 1932	Westchester Co. N. Y. House 1931	Westchester Co. N. Y. House 1932	Dallas House 1932	Baltimore House 1932
Conditioned Cubage	24000	22400	22400	22500	22500	19700	19300
General Operating Data							
Total No. of Test Hrs.	61	338	111	328	46	300	48
Total Gas Used, Cu.Ft.	4930 CF	38850 CF	9750 CF	49200 CF	6665 CF	36000 CF	5260 CF
B.t.u.	(800)	(540)	(800)	(535)	(535)	(1000)	(500)
Total Power Used, Kw.Hr.	115	809	205.2	492	79	1320	61
Total Water Used, Cu.Ft.	4130	17800	6216	11910	1785	—	1560
Total Operating Cost During Tests							
Gas Rate/M Cu.Ft.	$0.64	$ 0.78	$ 0.64	$ 0.60	$ 0.60	$ 0.65	$0.62
Gas Cost	$2.87	$30.30	$ 6.24	$ 29.50	$ 4.00	$23.40	$3.26
Power Rate/Kw.Hr.	$0.037	$ 0.037	$ 0.037	$ 0.05	$ 0.05	$ 0.04	$0.0312
Power Cost	$4.27	$29.90	$ 7.60	$ 24.60	$ 3.95	$52.80	$1.90
Water Rate/M Cu.Ft.	$0.51	$ 0.60	$ 0.51	$ 4.00	$ 4.00	—	$1.00
Water Cost	$2.14	$11.66	$ 3.17	$ 47.70	$ 7.13	—	$1.56
Total	$9.28	$71.86	$17.01	$106.45	$19.73	$76.20	$6.72
Hourly Operating Quantities							
Gas, Cu.Ft./Hr.	73.5	118.6	88	150	145	120	110
Power, Kw.	1.89	2.39	1.85	1.5	1.72	4.4	1.27
Water, Cu.Ft./Hr.	68.7	52.7	56	36.4	39.6	0.0	32.5
Average Operating Cost/Hour							
Gas	$0.047	$0.0925	$0.0561	$0.0900	$0.087	$0.078	$0.0682
Power	$0.070	$0.0885	$0.0684	$0.0750	$0.086	$0.094	$0.0325
Water	$0.035	$0.0316	$0.0285	$0.1456	$0.173	—	$0.0396
Total	$0.152	$0.2126	$0.1530	$0.3106	$0.346	$0.172	$0.1403

Detailed operating results of the test houses can be secured from the Committee on Industrial Gas Research, A. G. A. Headquarters.

selected. Also in no instance was any attempt made to dictate to the occupants the dry bulb temperature and relative humidity to be carried. These latter conditions were determined solely by the occupants and the plants were used or not used according to their individual desires. Except in the case of the Chicago No. 1 house and the Westchester house, the plants were not available for full summer's operation, due to late installation and shutdowns due to changes being made in equipment and controls.

From the tests which are reported on in this paper, it is unfortunately impossible to draw exact conclusions as to the probable number of hours usage throughout normal summers. On the other hand, it is possible to draw accurate conclusions as to the hourly cost and it is also possible to take such data as resulted from the tests and use them as a basis for checking, to a degree, engineering estimates of the probable summer's usage.

Engineers have estimated that from 600 to 1200 hours per summer will represent the usage of residential summer air-conditioning plants.

From observing the operation of these field tests and from studying the

Spray Pond for Supplying Water to After Cooler at Dallas Research Residence

Dallas Research Residence

No. 1. Chicago Research Residence

data resulting from them, the author believes that the above figures are, at the present time, somewhat high. In the beginning, it is believed that an estimated use of from 400 to 700 hours per season will represent average practice. However, it is quite likely that current engineering estimates will be substantially reached as home air conditioning becomes more generally accepted, and more installations are made and the public becomes more acclimated to living in the summer in houses that are fully conditioned throughout.

The tests indicated that in the practical operation of this type of home air-conditioning plants, considerable variation can be expected in the amounts of gas, water and power used. This is to be expected in the light of the variations in climate and in the living conditions which obtain in different residences. It should be noted that in each dwelling the power used included that required for circulating the conditioned air through the filters and through the house by way of the distribution and return ducts.

An interesting phase of the tests last summer was the manner in which the cooling water problem in the Dallas research residence was met. A study of the tap water temperatures in the summer indicated that it was too high to use and the cost element also made it desirable to devise some method to eliminate the direct use of tap water. (See Figure 2.)

There was an ornamental fish pond in the yard back of this house and an attempt was first made to utilize this as a water tower for the whole plant. A single spray was installed. Water was circulated from the pond through the main cooler, then through the after cooler and back to the pond through the spray. This gave satisfactory results in moderate weather, but it was soon realized that it would be unsatisfactory on days when the weather was extreme. The plant was consequently shut down and alterations were made. These alterations consisted of the installation of an indoor water tower equipped with a fan to rapidly circulate air through it. This air is taken in and discharged to the outside. The main cooler was connected to the indoor tower and the after cooler remained connected to the pond. The pumps on both water circuits were operated by a single motor. This arrangement proved satisfactory and conditions that were comfortable to the house owners were obtained during the balance of the season. With this layout make-up water only was necessary. The power consumption, however, increased somewhat. The success met with in conditioning this house with an indoor tower is considered important, as it demonstrated the practicability of not having to depend entirely upon drawing large quantities of water from the city mains and discharging it to the sewer. It is felt that this will be a protection to the growth of air conditioning in residences in localities where municipal and other re-

No. 2. Chicago Research Residence

Baltimore Research Residence

strictions are placed on the more or less unlimited use of water.

An interesting and important observation from the data obtained is the wide variation in the measured conditions maintained in the various dwellings. From Table 1 it can be seen that on typical days there was no uniformity as between any one house and the others. Left, as the plants were, to the operation of the home occupants, there was no uniformity from day to day of either dry bulb temperature or relative humidity. Whether or not this condition will obtain when large numbers of homes are fully conditioned can only be determined by experience. It is the belief of the author that the practice will develop among home owners of maintaining, in the summer, a much wider variation of conditions than is customary in the winter.

Conclusions

(1) The conditions maintained in the several dwellings were satisfactory to the owners and occupants and were regarded by them as a distinct contribution to better living.

(2) The hourly operating cost of completely conditioning with heat energy whole houses of average size and construction is from 14.03 cents per hour to 34.60 cents.

(3) From the observed data (variations in which are attributable to local rates, water temperature, availability of water, and weather conditions as observed during these tests), the general conclusion can be reached that, in the territory as covered by the Dallas, Chicago, Baltimore and New York research residences, residences of from 20,000 to 25,000 cu.ft. can be conditioned with an operating cost that will probably not exceed $80 or $100 per season.

(4) It can be expected that different users will select different conditions to be maintained in their homes for comfort, and that these conditions will probably vary from day to day.

(5) Under normal operating conditions the relative quantities of heat energy, power and water will vary greatly, and will be governed not only by outside weather conditions, but by the inside conditions the owners select from day to day to give them maximum comfort.

Acknowledgments

The author expresses his thanks for the cooperation extended to the Committee on Industrial Gas Research by the owners of the five houses and by the following organizations in carrying out this phase of the research in applying gas heat energy to summer air conditioning:

Consolidated Gas Company of New York, Consolidated Gas, Electric Light & Power Co. of Baltimore, Dallas Gas Company, The Peoples Gas Light & Coke Company and Silica Gel Corporation.

Many Enroll to Study Air Conditioning

REPRESENTATIVES from more than one-third of the States of this country and Canada have enrolled in the home correspondence study course in air conditioning, announced about two months ago by the University Extension Division of Rutgers University—the State University of New Jersey—in New Brunswick, N. J. The student body in the course now includes utility presidents, college professors, engineers, technical consultants, commercial leaders, plant superintendents, and technical men in many lines, all from States extending across the entire continent.

While the air conditioning world has become universally recognized as a major industry of the immediate future, its progress has been so rapid and widespread that education was called upon to provide a thorough, practical, comprehensive training for the technical man, in all of the outstanding branches of the new science. The need was obvious, and with the introduction of the course, utilities, heating and ventilating industries, and a large number of apparently unrelated businesses enrolled their technical men and executives in the course. Manufacturers of goods requiring scientifically balanced atmosphere, and organizations interested in the comfort of the public, are among the other industries which have placed their representatives in the course.

The course is arranged to give the student a thorough knowledge of the basic material of air conditioning, preparatory for the more technical and advanced subjects treated in detail in the later sections. The material provides for the study of basic computations, the engineering estimate, all types of equipment and apparatus, distribution systems, conditioning equipment, and control systems. Because of the high quality in the type of students, examination reveals that exceptionally high-grade work is being done by all engaged in this training program.

Wisconsin Utilities Merge

JOHN J. O'BRIEN, president, Standard Gas and Electric Company, announced last month the consolidation of the company's two Wisconsin subsidiaries—the Wisconsin Public Service Corporation and the Wisconsin Valley Electric Company and affiliates.

These two companies serve contiguous territories in Central and Eastern Wisconsin and the managements have for some time been engaged in interconnecting and otherwise consolidating the properties. The Public Service Commission of Wisconsin has approved the consolidation and authorized the issuance of the necessary securities to effect this merger.

More Dealers Cooperate to Sell Equipment

MORE plumbing and heating concerns and retail dealers cooperated with the Consolidated Gas Company of New York and its affiliated gas companies in the sale of modern gas equipment in 1932 than in any year previous, according to an announcement by O. H. Fogg, vice-president.

A total of 120 plumbers and dealers took active part in this cooperative sales program, Mr. Fogg stated.

"Many dealers more than doubled their net profits from gas appliance sales as a result of their active participation in the cooperative plan," Mr. Fogg said. "The ultimate aim of this cooperation is the exclusive sale and handling by all appliance dealers within our territory of gas-burning equipment which bears the approval seal of the Testing Laboratory of the American Gas Association."

Surmounting Cooking Competition*

By R. M. Conner

Director, A. G. A. Testing Laboratory

DOMESTIC consumption of gas has always been the backbone of our business and probably always will be. At least this statement can be regarded as being a fact within the lifetime of those present. Most important among our domestic load builders is the modern gas range. Assuming that there are 15 million such appliances now in use in the United States and that the average annual consumption of each is about 15,000 cubic feet, it is evident that this type of equipment accounts for approximately 225 billion cubic feet annually, or roughly 10 per cent of our total manufactured and natural gas sendout. Considering the importance of this appliance to the manufactured gas industry alone, we observe that the estimated percentage of the total sendout, which can be attributed to the gas range, equals about 38 per cent. Regardless of these figures, however, we all know that the gas range is one of the most important load building agencies that we have and if properly promoted, can be used to the greatest advantage in fortifying ourselves against future inroads by competitive fuels.

Several months ago I compiled some statistics designed to indicate in a general way the manner in which the energy requirements of our nation are being met. If carefully studied these data afford a fairly accurate index of fuel trends that may be expected in the future.

TABLE I

ESTIMATED ENERGY REQUIREMENTS OF THE UNITED STATES FOR 1920 AND 1930

Type of Fuel	*Unit of Measurement*	*Est. Cons. in Millions*	*Equiv. Boiler Hp. in Millions*	*% U. S. Energy Requirements 1920*	*% U. S. Energy Requirements 1930*	*% Increase or Decrease over 1920*
Coal	Short Tons	531	380,000	69.9	53.6	— 19.2
Coke	Short Tons	48	41,500	6.4	5.8	— 5.9
Wood	Cords	90	45,000	6.6	6.3	+ 1.3
Petroleum	Bbls.	898	162,000	11.9	22.8	+100.1
Gas	Cu.Ft.	2,463,900	69,200	4.5	9.8	+120.0
Electricity	Kw.Hr.	120,000	12,300	0.7	1.7	+175.0

Although the foregoing statistics are of a rather general nature, they do indicate, for example, that the use of coal is definitely on the decline and that the consumption of other kinds of solid fuels, if not actually decreasing, are barely holding their own. On the other hand, the use of petroleum products, electricity, and gas have all shown pronounced increases. This information leads me to conclude that in so far as gas ranges are concerned future competition may be expected to come largely from appliances consuming electricity or oil. Although quite a number of oil burners have been installed in coal and wood ranges in the New England territory and while it is my understanding that they are working out fairly satisfactorily, I doubt very seriously if any really important permanent competition may be expected generally from this source in the near future. It does seem that, if the problems connected with design of oil burners could be satisfactorily solved as well as the inconvenience attendant to refueling, etc., eliminated, equipment of this nature might ultimately become a contender for the cooking load. Such developments, however, do not appear to be in the immediate future. Consequently, this brief review seems to lead to the conclusion that the electric range is now our most serious competitor in the cooking field and it is to such appliances and the product they consume that I will confine the most of my remarks.

I do not mean to imply that appliances burning solid or liquid fuels are not used extensively, particularly in rural districts; they are. However, the inherent advantages of the modern gas range from the standpoint of appearance, cleanliness, speed, and efficiency and flexibility in performance are so far advanced as to render solid fuel burning appliances relatively unimportant from a competitive standpoint where gas service exists. Contrasted with this fact we find that the electrical industry has placed on the market cooking equipment exceedingly neat and pleasing in appearance, efficient in performance, and probably equal to the gas range in all other points with the exception of those that will be brought out later. Further than this, we find that our electrical friends have skillfully woven the glamor of romance about their industry until electricity is regarded by the layman as something mysterious and is often referred to as a "gift of God." Admittedly, its growth and use in the United States has been phenomenal if not spectacular, and its influence upon our civilization has not only been wide but far-reaching in its effect.

On the other hand, certain economic aspects of the power situation are still in a very controversial stage. No other branch of science has perhaps been troubled by so many popular misconceptions and fallacies, conceived by otherwise well-informed people. These false theories exist not alone in the popular mind, but are held by some of our leaders of political and economic thought and even by many engineers who are not in close touch with the problems relating to the production and utilization of electric power.

As I have predicted that electricity will in all probability prove our strongest competitor in the near future, we might analyze this product of our

* Address before Mid-West Regional Gas Sales Conference, Chicago, Ill., Feb. 15, 1933.

modern age profitably for a few moments. It is quite well known that the use of city gas for domestic cooking purposes is meeting its greatest competition in territories supplied by hydro-electric power. Such situations are perhaps best exemplified by the conditions existing in the Pacific Northwest and various localities around the Great Lakes where extremely low rates for electrical energy prevail.

Some extremists go so far as to predict that the American people will not only cook their meals with electricity ultimately but that they will also heat their homes as well. The latter prediction seems most fantastic as its realization would require the production of about 45 times as much energy as is now being generated hydro-electrically and about three times the ultimate generating capacity of all usable streams in the United States. At the same time a further analysis of this subject indicates that the average cost of hydro-electric power plants has increased from roughly $100 per kw. capacity in the early history of our country to as much as $600 per kw. in some instances in 1931. Furthermore, the percentage of electricity generated hydro-electrically is decreasing each year and has now fallen to about 33 per cent of the total amount of power produced annually. Still further, this percentage should grow smaller as new power sites become more expensive and are located farther away from available markets.

While marked advances have been made in the production of electrical energy from steam power plants, the average now probably being about 0.6 kw. per hour per pound of coal, it should be borne in mind that most of such plants still operate at an overall efficiency of only about 20 per cent. Estimating the transmission and distribution losses at 15 per cent it is doubtful if 15 per cent of the energy originally available is finally utilized.

Having very briefly discussed the electric situation we might apply a similar yardstick to the future of gas. Undoubtedly, more misinformation is prevalent regarding the possibilities of natural gas than most any other fuel. As this product is often delivered to consumers through long and expensive transmission lines, it must be sold at a price that will render the utility a fair return and within a reasonable length of time amortize the original pipe line investment. Notwithstanding this fact, however, we find that natural gas can be, and is being, delivered from fields to centers of distribution as far distant as a thousand miles and is being sold at a cost per B.t.u. considerably below the rates prevailing for electricity.

Although the competitive situation existing between manufactured gas and electricity is not as favorable to the former as for natural gas, nevertheless, it is, generally speaking, quite encouraging. Except for a very few isolated cases, manufactured gas now sells at a considerably lower average cost per B.t.u. than electrical energy. As time goes on it seems only reasonable to assume that this difference in commodity cost will be maintained, if not actually increased, in favor of gas. The use of refinery gases for enrichment purposes, mixing of gases, and many other improvements in the production of manufactured gas, should act to maintain, if not lower, operating costs for gas-burning equipment.

Another new and promising development that should assist the gas industry in maintaining its economic advantage is the use of liquefied petroleum gases in rural districts. These fuels afford an opportunity to secure a class of business that under other circumstances might be forever lost to city gas.

I have always felt that the only really accurate way in which to compare the operating costs of gas and electric ranges would be to take into account the initial costs of the appliances, carrying charges, maintenance charges, efficiencies of utilization, and the relative commodity costs. With information of this nature as a background, it should be quite simple to convincingly demonstrate the economic advantages of gas. Table II, which follows, presents statistics of this nature. Based on average rates and taking into account the above mentioned items, it can readily be shown that the average cost of electricity for cooking purposes is roughly twice that of manufactured gas. Inasmuch as natural gas is generally considerably higher in heating value than manufactured gas and its cost per cubic foot usually less, its ultimate cost to the consumer for similar purposes should not average more than one-third that of electricity. In making such comparison it must, of course, be remembered that total costs and not energy costs are referred to.

TABLE II

COMPARATIVE COSTS OF GAS AND ELECTRICITY FOR DOMESTIC COOKING PURPOSES

Item	*Electricity*	*Gas*	*Excess of Electricity over Gas, Per Cent*
1. Estimated initial cost of range	$150.00	$100.00	50
2. Estimated annual carrying charge (Assuming 10 yr. life)	15.00	10.00	50
3. Estimated annual cost of maintenance	2.50	1.50	66
4. Average cost of service per unit of measurement	*0.0352	*1.14	—
5. Estimated monthly consumption kw.hr. or cu.ft.	85	1200	—
6. Estimated monthly cost of energy	2.99	1.37	118
7. Estimated monthly carrying charge	1.25	0.83	50
8. Estimated monthly maintenance costs	0.21	0.12	66
Total monthly cost of service (Items 6, 7, and 8)	$ 4.45	$ 2.32	92

* Average costs of manufactured gas and electric service supplied, respectively, by the American Gas Association and the National Electric Light Association.

Because installation costs of electric ranges vary to a wide extent such items have not been taken into account in preparing the above statistics; however, they will probably average from two to three times those of gas ranges. This fact of course makes the comparison still more favorable to gas. Realizing that conditions affecting the ultimate cost of cooking service to the consumer vary widely throughout the country, it is thought advisable to provide Chart No. 1 (See A.G.A. MONTHLY, May, 1932, p. 182) which will afford those interested with means of determining promptly relative operating costs of gas and electric ranges for widely varying commodity costs.

Our competitors contend that operating cost is not the deciding factor, and

on this point I am inclined to agree. I shall now attempt to point out that considerations other than those of an economic nature are quite as favorable to the gas range as the electric, if not actually more so.

Electric ranges have been represented as possessing the following inherent advantages:

1. More modern in appearance and design.
2. Permit maintenance of cooler kitchens due to superior oven insulation.
3. Cause less shrinkage of foods.
4. Create superior food flavors.
5. Possess higher thermal efficiencies.
6. Prevent discoloration of kitchen walls.
7. Prevent depletion of oxygen content of surrounding rooms.
8. Eliminate fire, explosion and asphyxiation hazards.

Taking up the first item we find that there are about 275 manufacturers producing gas ranges compared to perhaps 20 in the electric field. The laws of probability, if nothing else, should act to provide a greater number of varieties and designs in the gas field to select from and in some instances result in better appearance of the gas range. A practical analysis of this subject reveals such assumptions to be the case. Accordingly, the reputed advantages of the electric range from this standpoint appear to be rather far-fetched.

Very elaborate tests conducted by competent engineers of a large eastern public utility indicated that the differences in temperatures surrounding insulated oven gas and electric ranges operating under exactly similar service conditions were negligible. They were so small in fact that they could not be noticed even by one with the most delicate sense of discernment. Further than this, tests carried out at our Laboratory on the most modern types of gas and electric ranges indicated that some gas ranges are actually superior from an insulation standpoint to insulated types of electric ranges.

Theories relating to differences in food shrinkage and flavor in cooked products from gas and electric ranges, generally speaking, are actually silly and need not be given serious thought here. Actual tests conducted by some of the most experienced and competent home economic experts have shown conclusively that similar foods cooked in like cooking utensils, at similar temperatures produce the same results. Moreover, a very elaborate investigation conducted by home economists at our Laboratory as late as 1932 on this subject indicated that there were no differences in food flavors or in the shrinkage of meats cooked on gas and electric ranges.

Tests also conducted by the A.G.A. Laboratory on the most modern types of gas and electric ranges indicated that the latter are on an average slightly more efficient. I might say on this point, however, that marked improvements from this standpoint are in the offing for gas ranges and I expect this minor advantage, if it may be termed as such, which the electric range now possesses, to be entirely nullified in the near future. I never could quite understand, however, why so many people in discussing this subject apparently overlook the fact that slight differences in operating efficiency may be entirely offset by differences in commodity cost. High efficiency is generally interpreted by the layman as being a function of low operating cost. As I have pointed out, however, the average total cost of operating the electric range is roughly twice that of a similar gas-burning appliance consuming manufactured gas and three to four times that of one burning natural gas, notwithstanding small differences in operating efficiencies.

Many damaging statements have been made against the gas range for its assumed part in the discoloration of kitchen walls. It has been contended that gas contains grease and other materials normally solids which when cooled are deposited on the kitchen walls. If such assumptions are true, I wonder how our competitors account for the dark deposits which streak the walls of countless dwellings back of steam and hot water radiators. In brief, the greasy deposits referred to come entirely from the cooked foods; their dark color can generally be attributed to the absorption of dust particles from the air and this condition ultimately develops under conditions favorable to it irrespective of the type of cooking appliance used.

For a more thorough review of the subject matter covered in items 7 and 8 I must refer you to my article, entitled "Gas and Electric Ranges," appearing in the October issue of the A.G.A. MONTHLY and subsequently in the January and February issues of the *Magic Chef* magazine published by the American Stove Company. It seems sufficient, however, to state that these reputed hazards so freely attributed to gas ranges are more mythical than real. I have only to point to the very satisfactory safety record of the 15 million gas ranges now in use. Moreover, it can very easily be proven both practically and theoretically that the reduction in oxygen content of any ordinary sized room, during the use of a properly installed and adjusted gas range, is insignificant and should never under any usual circumstances of usage prove hazardous or even objectionable. Furthermore, gas ranges approved by our Laboratory, and I am glad to say that this class now constitute the great majority sold and distributed throughout the United States and Canada, have been carefully tested and certified for their safety from leakage, explosion, or asphyxiation hazards under every reasonable condition of use.

Up to the present time we have discussed subjects on which we seem to be more or less on the defensive. Why not meet the electric man on his own ground by pointing out to the wide world the many advantages that the gas range has? While some of them have already been touched upon it would perhaps be worth while to summarize the more important ones even at the expense of repetition. Some of the more important are as follows:

1. The larger number of makes, designs, and different sizes of gas ranges afford a greater variety from which to select.
2. Gas ranges are considerably less expensive than electric ranges from the standpoint of first cost, installation cost, maintenance cost, carrying charges, and operating costs.
3. The cooking speed of gas range top burners is from 40 to 90 per cent greater than that of electric range top heating elements. Further the time ratio of oven heating varies from 2.6 to 5.4 in favor of gas, depending on the oven temperature finally obtained.
4. Gas ranges are far more flexible in performance. This is a very important factor in saving fuel and one that provides more accurate control of heat.

5. Gas burners are easier to clean than electric heating elements and are not subject to such frequent periodic replacements and repairs.

6. Electric current interruptions occur more frequently than complete discontinuation of gas service. This fact makes the gas range more dependable.

7. The second-hand or trade-in value of gas ranges is relatively higher on account of the ease with which gas equipment may be re-installed and on account of the electrical industry's widely varying installation policies.

I hope that I have not appeared to minimize the importance of electrical competition. Coming originally from the Pacific Northwest where it certainly exists, I am forced to conclude, after a careful study of the subject extending over a good many years, that the progress which has been made by the electric man has been the result of greater use of effective advertising and more intensive sales effort, aided by favorable yet questionable rate structures, rather than to any fundamental advantages that his product might possess. A careful survey of the situation will show that mechanical improvements in the gas range field have kept step with those in the electric. Data assembled by our Laboratory and a number of disinterested agencies show that the competitive situation between gas and electricity in domestic appliances from an economic standpoint has not changed materially in the past 15 years. Appliances in both fields seem to have been developed in efficiency and convenience and the advantages of gas for cooking purposes are substantially the same as they were in 1917. At the present time, I can see no economic or engineering reasons why we should fear electrical competition if we properly fortify ourselves by educating our employees concerning the actual facts and follow this knowledge up with the proper amount of sales effort.

With faith in the ability, and desire, of our manufacturers to continue supplying us with safe, efficient, and convenient cooking appliances, it seems to me that all that is needed in addition to bring about the desired results is continued conscientious, consistent, and intelligently directed sales effort. As a matter of fact, it appears that we are justified in going even further and concluding that we possess a sufficient number of fundamental advantages to eventually establish by the application of continued sales effort, the superiority of gas in the cooking field.

Messrs. Dame and Fogarty Succeed Late Edwin Gruhl

Frank L. Dame

DIRECTORS of The North American Company have elected Frank L. Dame president to fill the vacancy caused by the death of Edwin Gruhl.

Mr. Dame also remains chairman of the board, which office he assumed April 25, 1932, when Mr. Gruhl became president. As chairman of the board Mr. Dame had not curtailed his active service, having continued to serve in a full time capacity. Mr. Dame had been president of The North American Company from 1921 until nine months ago when he became chairman of the board in order that Mr. Gruhl might receive the title of the position which in practical service, as vice-president and general manager, he had shared with Mr. Dame as joint executive head of the company for eleven years.

Harrison Williams was elected a director and member of the executive committee to succeed Mr. Gruhl. Mr. Williams and the group of investment companies in which he is interested represent the largest holdings in The North American Company.

James F. Fogarty

James F. Fogarty, of New York, vice-president of The North American Company, was elected president of North American Light & Power Company at a meeting of the directors in Chicago. His election filled the vacancy also caused by the death of Mr. Gruhl, president of The North American Company, who became president of North American Light & Power Company on December 21. Mr. Fogarty has been a director of the latter company since July, 1932.

Air Conditioning Course Opens

THE home study course on the "Elements of House Heating and Air Conditioning" projected by Dr. Huff and Dr. Holtz, as announced on page 28 of the January issue of THE MONTHLY, has enrolled sufficient students to permit its opening and the work is moving forward. Two lessons have already been distributed to those registered.

The first dealt with "Physical Units and the Nature and Measurement of Heat" and discussed systems of physical units and methods for their measurement and quantitative factors governing conversion from one system of units to another, major attention being given to the properties of heat and the measurement of its quantities. Included were fundamental equations for the various modes for the transfer of heat and quantitative expressions governing the thermal properties of steam.

The second lesson dealt with "Heat Transmission Through Building Construction" and described the factors governing the determination and calculation of heat losses through such materials, paying particular attention to the work of Harding and Williard and Rowley and Algren. The mathematical relations between overall and individual coefficients are developed together with the effect of secondary factors, such as wind velocity and temperature. Numerous examples are given showing the calculation of coefficients of heat transmission for various types of materials and various constructions together with references to the original sources. Problems illustrating the fundamental principles accompany each lesson. Persons interested may register at any time. Applicants for registration should address Dr. Wilbert J. Huff, 105 Tunbridge Road, Baltimore, Maryland.

French Engineers Here To Study Industry

A. G. A. Headquarters was pleased to receive Bertrand de Comminges, Ingenieur a la Compagnie Generale du Gaz Pour La France et L'Etranger and Albert Alleaume, Ingenieur a la Societe D'Eclairage, Chauffage et Force Motrice, both members of de l'Association Technique de l'Industrie du Gaz en France, who arrived last month to make an inspection tour of gas properties in the United States. Messieurs Comminges and Alleaume, the former an individual member of the American Gas Association, have a commission from M. Vautier, president of the French Gas Association, to study the engineering and economic status of refinery oil gas practice and its relation to the gas industry in this country. It is believed their stay in this country will be an extended one.

Cooperative Merchandising Increases Gas Load And Aids Dealers

By William J. Cashman and Fred S. Hoefer
Trade Relations Director *Assistant New Business Manager*
Empire-New York Group
Associated Gas and Electric System

ONE hundred ninety-eight automatic water heaters were sold by various retail outlets in communities served by the Empire Gas and Electric Company and the New York State Electric and Gas Corporation during a six weeks' "Clean Up With Hot Water and Soap" campaign which the utilities sponsored.

In conjunction with this sales effort, which was conducted with the cooperation of plumbers, hardware merchants, and other sales outlets, there were 813 gas ranges disposed of during the same period by all merchandizers.

Because of the load building qualities of the gas storage water heater, we were primarily interested in seeing that the retailers in the communities cooperated with us, and it was through this united effort that they sold 65 per cent of the merchandise.

The Empire-New York Group of Associated Gas and Electric Company utilities operate under what was originally known as the Ithaca Plan, but which has since spread to all the communities served by the group. By this method the utility attempts to gain the good will of the merchants by notifying them of special sales campaigns; and by displaying general promotional advertising in the daily newspapers, without mentioning brand names or prices, and stating, "ask us or see your dealer," on all copy.

The utility offers the plumbers and merchants the use of its home service, sales research, and other facilities. It does not interfere with the sales prospects of other firms, but actually assists them in closing sales. The utility salesman finds it to his advantage to assist the independent plumber or hardware outlet in every way possible, for he is compensated, not on the gross dollar volume of the business he does, but on the load building propensities of the appliances sold by all the outlets in his territory.

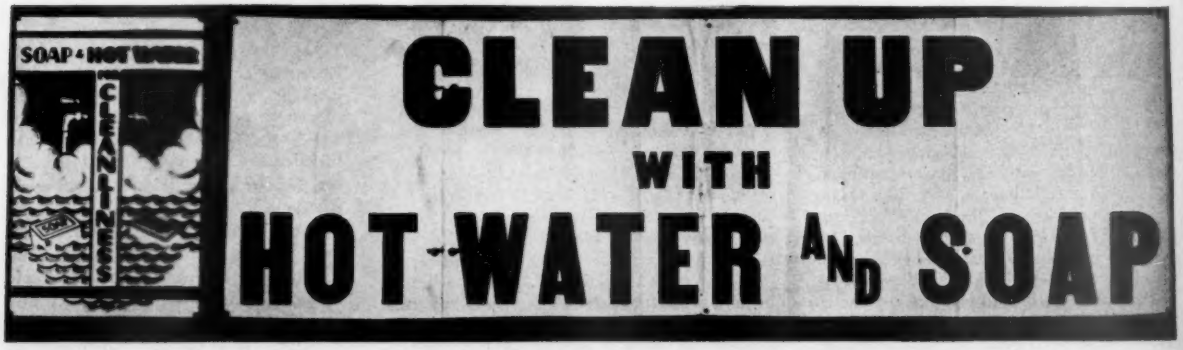
While we spent a great deal of time, and went to considerable expense in mapping out and conducting the activity, we feel we were well repaid for it all. We estimate that 7,128 M cu.ft. were added to our annual load through the sale of the 198 automatic water heaters, and 4,879 M cu.ft. additional from the 813 gas ranges. If one estimates each M cu.ft. worth $1 to the utility, we were successful in increasing our annual revenue from gas over $12,000.

Our "Clean Up" activity was unique, we believe, in that we attempted to utilize the services of every merchant who would assist us in promoting the idea of cleanliness, whether they sold automatic water heaters, soap, towels, mops, pails, vacuum cleaners, or cleaning fluids.

As everybody in the gas business knows, the characteristics of a gas storage heater are such that the average housewife does not attach as much interest to it as she does to a new automatic refrigerator or range which is on display in her kitchen.

We thought it necessary, therefore, to create a desire on the part of the public for a continuous supply of hot water as an aid to cleanliness and good health, something that every modern housewife is striving for.

In order to promote the idea of cleanliness we enlisted the aid of the chamber of commerce, mayor, and health officer in each community in inaugurating a clean-up month, and secured their approval in the release of



A Campaign Banner

publicity concerning the activity. We also had the cooperation of manufacturers and their associations, life insurance companies, chain stores, drug stores, hardware stores, plumbers, and other outlets that merchandized anything that could be tied up with the activity.

Letters were sent out to all the manufacturers of automatic water heaters asking them to get in touch with their dealers in the territory, advising them to tie in with the campaign effort.

The following letter which was sent us by a leading manufacturer of gas storage water heaters is an indication of the assistance given us:

"We will immediately advise our representative to contact our dealers in the respective communities, with a view of getting them interested in this campaign.

"It has always been a policy of our company to provide sales help, promotional literature, window displays, etc., to our dealers to assist them in the sale of our products, and we believe some of them are so equipped. However, we will make a survey and those that are interested will be provided for.

"We will also advise them in reference to your training schools, and will also direct our representative to contact the new business manager of the Associated Gas and Electric Company in the towns in which we are interested, as suggested in your letter."

One company had dealers in but four of the eight communities in which we were sponsoring the campaign, and asked us to give it the names of leading plumbers that might be interested in carrying its line. We were glad to be of this assistance to the manufacturer.

We next enlisted the aid of the soap manufacturers in asking their dealers in the various communities to tie in with the sales drive through window displays and newspaper advertising. One nationally known manufacturer offered to supply free washing powder for any demonstrations that might be put on, while another wrote us offering to advertise in the daily newspapers in all the cities conducting the activity, and to write to the newspapers asking them to get the merchants handling its brand of soap to tie-in with the activity through his own advertising.

To make the window displays more effective, we had 300 banners with red and blue letters proclaiming "Clean Up With Hot Water and Soap" for use at the tops of display windows. In addition, we originated a campaign seal which showed two faucets with steaming hot water coming out of each, and a couple cakes of soap floating in the water below. The caption at the bottom of the seal told the consumer that the dealer was a "Member of the Cleanliness Bureau," a name which we had decided upon as the underlying organization back of our activity. The seal was used in the corners of the display windows.

Always around the corner when he's needed

HE is your plumber-dealer — a progressive merchant who has wide experience in selling and installing gas appliances. He cooperates with your gas company in insisting that only merchandise of reliability be installed—and properly installed—in the homes of this community.

Whether it is a gas storage water heater, range or refrigerator, or gas house heating system, he is competent to furnish and install equipment which will give you the best of service. At his store as well as ours modern gas appliances are on display. Let him explain how their many new improvements will save your time and simplify your housework.

Associated Gas & Electric System

Newspaper Advertisement that Encouraged Dealers

One of the greatest sources of assistance to us was the Cleanliness Institute of New York City.

While washing machines are out of the gas field, we considered the assistance of the manufacturers of value in putting across the cleanliness idea. The American Washing Machine Manufacturers Association sent out a bulletin to its members advising them of our activity, its purpose, and how they could help us through cleanliness window displays emphasizing the washing machine in the home.

We also contacted the laundries in all the cities in our territory through their national association. We considered the cooperation of these con-

HOT SPRINGS
Right in your basement
GAS hot water heating makes it as simple as that! You turn the faucet and there's your hot water, plenty of it, sparkling-clear, no matter what the hour.
It requires no attention, no waiting, no running up and down stairs. Really, it's just like having hot springs right in your own basement!
The cost?—it's no longer a factor. A few pennies a day will bring you many dollars worth of comfort, provided you use gas, the quicker, cheaper form of fuel.
ASK ANY DEALER
OR SEE US
Associated Gas & Electric System
ASSOCIATED GAS & ELECTRIC SYSTEM

Typical Piece of Newspaper Copy Used in Campaign

cerns of considerable importance in putting across the idea of our promotional effort, since cleanliness secured through the use of hot water and soap form the foundation of the laundry industry.

Towels, also, are allied with the idea of cleanliness, so we got in touch with the leading manufacturers of that line.

We had publicity releases signed by the mayor, secretary of the chamber of commerce, and the health officer in each community. In addition, the chambers of commerce in the cities were glad to write a special letter to each one of the member merchants asking their assistance.

The utility had several hundred broadsides printed for distribution among all the plumbers, hardware stores, and other gas merchandise outlets in the territory. The broadsides told of the organization and purpose of the sales drive, quotas, terms of sale, contests and prizes, assistance that could be obtained from manufacturers and distributors, and outlined the whole sales promotion plan.

We arranged for the distribution of cash prizes to members of the Empire-New York Group's sales organization on the basis of their ability to get the cooperating dealers to make sales. The prizes were awarded on the load-building value of the appliances sold.

Our advertising agency prepared a special series of advertisements of a general promotional nature with the words: "Just ask us or ANY DEALER," on each piece of copy. The majority of the advertisers tying in with our effort used a campaign seal in the corner of their copy.

As a result of our efforts two hundred window displays conveyed the idea of the campaign to the public. More than fifty merchants tied in with the activity through newspaper advertising.

We learned a lot from our first campaign that we believe will be of assistance to us in the similar program we intend to promote in the spring. It is our belief that a permanent Cleanliness Bureau might well be established to educate the public to the health value of the use of hot water and soap, and we expect to carry out this idea in our spring campaign.

Mr. Williams in New Post

C. D. WILLIAMS, formerly secretary of the New England Gas Association, has been elected secretary of the United States Brewers' Association. His headquarters will be in New York.

Wanted:

AMERICAN GAS ASSOCIATION Proceedings for 1927 and 1928 for the library of The Institution of Gas Engineers. Address J. R. W. Alexander, Secretary, The Institution of Gas Engineers, 28 Grosvenor Gardens, Westminster, S. W. 1, England.

Affiliated Association Activities

Oklahoma Utilities Association

PROGRESS in air conditioning and air cooling, in which field it is believed there will be tremendous expansion of the demand for gas during the decade immediately ahead, will be a leading subject for consideration and discussion at the fifteenth annual convention of the Oklahoma Utilities Association in Oklahoma City, March 7 and 8. The leading paper on this subject will be read by Thomas G. Storey, of Tulsa, industrial gas engineer of the Oklahoma Natural Gas Corporation, with discussion by other gas engineers of Oklahoma and the Southwest.

Another interesting gas feature of the convention program will be the explanation of the new course in natural gas engineering offered by the University of Oklahoma, mentioned more fully elsewhere in this issue of THE MONTHLY, by Robert W. Hendee, president of the Oklahoma Natural, and Prof. W. H. Carson, of the Oklahoma University engineering faculty.

A third subject of interest and importance to utility men of all branches of the industry will have to do with municipal ownership of utilities. J. A. Whitlow, Tulsa, vice-president and manager of the Public Service Company of Oklahoma, will discuss the effect of municipal utility ownership and operation on the public as a whole, having particular reference to citizens who are taxpayers outside the cities or towns operating municipal, tax-free utilities. He will be followed by R. D. Cockrell, a field representative of the Oklahoma Utilities Association, who has been engaged for several months in an intensive study of municipal utility operation in Oklahoma and will speak on "Unmasking Municipal Utility Operation." His discussion will include municipal utilities of all kinds.

Major Alexander Forward, managing director of the A.G.A., who has attended and addressed previous Oklahoma conventions, will review the past year in the gas industry and attempt to read such signs as there are with reference to the future.

R. J. Daugherty, president of the Oklahoma Association the past year, is public relations director for the Empire Companies, one of the largest of the Cities Service groups. He also has the distinction of serving as mayor of his home city, Bartlesville. The presidency of the Oklahoma Association rotates between the four divisions of the Association, which embraces all branches of the utility industry.

The convention opens with a safety program and first aid contest on the night of March 6. A gas company, the Oklahoma Natural, will seek to win for the third time, and permanently, a silver cup trophy offered by the Association in this annual contest. Teams from electric, telephone and joint gas-electric members also will compete.

Douglas Malloch, of Chicago, will be the speaker at the annual convention dinner on the night of March 7. His talk will be on "This So-Called Depression."

Convention Calendar

March

2- 3 Eastern Natural Gas Sales Conference
Schenley Hotel, Pittsburgh, Pa.

2- 3 Pacific Coast Gas Association, Spring Conference, Technical Section
Los Angeles, Calif.

7- 8 Oklahoma Utilities Association
Hotel Biltmore, Oklahoma City, Okla.

16 New Jersey Gas Association
Walt Whitman Hotel, Camden, N. J.

23-25 American Association Petroleum Geologists
Rice Hotel, Houston, Texas

25-27 American Gas Association, Home Service Conference
Auditorium, Consolidated Gas Company of New York, New York, N. Y.

27-31 American Society Civil Engineers
Miami, Fla.

April

3- 5 American Gas Association, Distribution Conference
William Penn Hotel, Pittsburgh, Pa.

10-12 Mid-West Gas Association
Fort Des Moines Hotel, Des Moines, Iowa

21 Maryland Utilities Association
Lord Baltimore Hotel, Baltimore, Md.

May

2- 4 A.G.A. Southern Regional Sales Conference
Washington, D. C.

2- 4 Southern Gas Association
Washington, D. C.

2- 5 Chamber of Commerce of United States
Washington, D. C.

9-11 Pennsylvania Gas Association
Wernersville, Pa.

17-19 American Petroleum Institute, Mid-Year Meeting
Tulsa, Okla.

22-23 American Gas Association Joint Committee Conference of Production & Chemical Committees
Hotel New Yorker, New York, N. Y.

May 29 to June 1, National Fire Protection Association
Milwaukee, Wisc.

May 30 to June 2 Institution of Gas Engineers (British)
Liverpool, England

June

12-15 National Association of Purchasing Agents
Chicago, Ill.

26-30 American Society for Testing Materials
Chicago, Ill.

26-30 American Society of Mechanical Engineers
Chicago, Ill.

26-30 American Institute of Electrical Engineers
Chicago, Ill.

September

18-19 Canadian Gas Association
Ottawa, Ontario

Wk. 25 International Gas Conference and Fifteenth Annual Convention, American Gas Association
Stevens Hotel, Chicago, Ill.

October

Wk. 11 National Association of Railroad & Utilities Commissioners
Cincinnati, Ohio

24-26 American Petroleum Institute
Chicago, Ill.

New England Gas Association

H. R. Sterrett

THE 400 executives who attended the Seventh Annual Business Conference of the New England Gas Association in Boston, February 16 and 17, profited by a well-rounded and informative program. The prevailing attitude in facing existing conditions was one of general optimism.

The first item on the program was the presentation of "Sales Contest Awards" by J. H. Sumner to the companies showing the greatest sales per domestic customer in the three major classifications—ranges, automatic water heaters and refrigerators also for the company making the best showing in domestic gas output for the year 1932.

In greeting the Conference, Managing Director Alexander Forward of the American Gas Association, expressed gratification in the present condition of the gas industry and a spirit of optimism for its future.

The following officers were elected for the ensuing year:

President, H. R. Sterrett, New Haven, Conn.; vice-president, F. M. Goodwin, Boston, Mass.; second vice-president, R. H. Knowlton, Hartford, Conn.; treasurer, F. D. Cadwallader, Boston, Mass.; directors at large—Walter M. Africa, Manchester, N. H.; David Daly, Pawtucket, R. I.; R. L. Fletcher, Providence, R. I.; George S. Hawley, Bridgeport, Conn.; and John West, Arlington, Mass.

President Haddock introduced the asso-

ciation's new executive secretary, Clark Belden, who reviewed the many activities during the past year and expressed his pleasure in finding a splendid spirit of cooperation prevailing in the association.

President Haddock in his address emphasized the importance of association work especially under present conditions. He appealed to the senior executives to permit and encourage the younger men to participate actively in the program of the association in preparation for the day when they will be at the helm. Mr. Haddock expressed his faith as follows:

"I know that the gas industry has within it the brains, ability and flexibility to solve the problems confronting it. Other industries, far afield of ours, are facing competitive problems and are making headway against them. I do not believe that these industries possess more brains than ours, nor that their problems are less severe than ours. If we are thinking about competition these days, don't let us forget that all other industries are doing the same thing. Let us at least get the right perspective in this question of competition. We have no monopoly on the competition problem. It only seems that way some times."

In his usual genial manner, Arthur Hewitt, president of the American Gas Association, delivered an informative address reviewing the more important activities of the national body. In closing, Mr. Hewitt said, "One might sum up by saying that 'The Gas Industry' has survived three years of depression with its morale unbroken, its resources not seriously affected, its stability fully demonstrated, and its essentiality fully understood and generally appreciated. The future of any industry of which this can be said, is assured."

The paper, "Pushing Gas in Combination Companies," by Edward G. Twohey, Lawrence Gas and Electric Company, proved to be one of outstanding interest and undoubtedly will be widely read on its appearance in the trade press. This paper presented facts and figures of the gas side of the combination company picture with such clarity and vision as to make imperative its reading in full by all utility executives.

"Meeting Modern Gas Competition" was the title of a paper delivered by W. A. Anderson, of N. W. Ayer and Son, in which he pointed out the change in form of competition from individual to industrial. He further stated "There is no sound reason why the consuming public cannot be made to think of gas in terms of comfort, convenience, health and economy. It is quite possible to express these things in terms of advertising well-cooked, economical food, plenty of hot water that is really hot when one wants it, cozy homes without worry about the household conveniences, increased spare time, decreased drudgery, inexpensive, quiet, clean preservation of food." Mr. Anderson concluded by showing the first of the gas advertisements that will appear in the Boston papers as a part of the local cooperative campaign.

The Employee Business Building Plan of the Associated System was described by H. M. Henry, of the Utility Management Corporation. Its primary purpose is the training of employees to educate the customer on the various services available. Mr. Henry concluded by saying "While it is too early for us to really valuate the Employee Business Building Plan, we are sufficiently well satisfied with the results to date, and impressed with its future possibilities, that we are now taking steps to strengthen the plan and overcome some of the short-comings. We believe it will repay the utilities of the country to study the employee activities of companies using the employee in customer education and recommend the use of employees based on our own experience."

The successful plan for employee cooperation in sales promotion now being used in New Haven was described by H. R. Sterrett, of the New Haven Gas Light Company.

"Neglect of Economic and Business Factors in Pricing Public Utility Service" was the title of a timely address by C. O. Ruggles, of the Harvard School of Business Administration. Professor Ruggles recommended that industrial rates be increased during a business boom to create a reserve for the time when the business cycle declines. He believes that commissions should have more men with an understanding of the utility problem from a business and economic point of view.

In his paper on "Trend of House Heating Rates in New England" L. H. Knapp of the Pawtucket Gas Company, showed the growth of the business from 500 installations in 1925 to 7,000 at the present time bringing a total revenue of over $3,000,000 a year. He summarized the rate situation as follows:

Lower priced rates, particularly in the blocks for large consumers; the acceptance of the combined or all-purpose heating rate; elimination of actual service charges and the substitution of short initial blocks at relatively high prices, and a great interest in rates for this class of business and the introduction of several novel features.

The problem of collection has assumed an importance greater than ever before in the history of the gas industry. This timely subject was presented by George B. Lees, New Haven Gas Light Company, in a paper on "Present Day Collections" which was discussed by H. O. Wendt, Salem Gas Light Company and L. A. Mayo, Connecticut Light and Power Company.

The report of the Dealer-Utility Committee was presented by Carl H. Cummings, industrial appliance company, who defined dealer utility cooperation, cited most frequent obstacles to its success, its assets and liabilities, coordinated advertising and merchandising policies and possible future activities.

The viewpoint of a dealer on the matter of dealer-utility cooperation was interestingly presented by Philip S. Bailey, president of the Old Colony Gas Appliance Dealer Association, an organization started in October, 1931, and reported as most successful.

A paper "Operating High Spots for 1932," by Horace G. Taylor, Lawrence Gas and Electric Company, touched many phases of operation including heavy oils, automatic and mechanical stokers, coke, residuals, mechanical points, clamps, pipe, fittings, high pressure installations, meters, transportation and a description of the new all-welded 200,000-ft. waterless holder at Biddeford, Maine.

The competitive situation in the industry was stressed by Water C. Beckjord, vice-president of the Boston Consolidated Gas Company and chairman of the A. G. A. Commercial Section, in an address, "Future Sales Effort of the Gas Industry." Mr. Beckjord's able presentation left much food for thought. A discussion of his paper by R. L. Fletcher, of the Providence Gas Company, followed. He recommended a more liberal attitude on allowable main extensions, emphasized the possibilities of house heating and called attention to the 20 to 30 per cent possible reduction in bills and adequate home insulation.

A delightful skit, "A Woman's Point of View" stressing the advantages of gas cooking by Mrs. Lyda Flanders, Worcester Gas Light Company, was presented in which Mrs. Flanders was assisted by Mrs. Eleanor Kingsley and Miss Alice Morrison.

William J. Fortune, Shawmut National Bank, in his address "The Economic Progress of New England," called attention to the fact that the New England states are better off then any other place in the world of a similar area and made a plea for the individual use of influence to promote confidence in the future of New England and the United States.

Mid-West Gas Association

A SPLENDID program is in the making for the convention of the Mid-West Gas Association to be held in Des Moines, Iowa, April 10, 11 and 12, according to an announcement made by Secretary R. B. Searing. It is expected that announcements giving the details of the program will be made in the near future. The conventions of this Association always have been timely and informative and are keenly anticipated by the gas fraternity in that section of the country.

The Maryland Utilities Association

THE program for the meeting of The Maryland Utilities Association to be at the Lord Baltimore Hotel, April 21, in Baltimore, is now being arranged. It is planned to have meetings of the electric, gas and transportation in the morning and a general session in the afternoon followed by election of officers. A dinner dance will be held in the evening. Details of the program will be announced later.

ACCOUNTING SECTION

J. M. ROBERTS, Chairman H. W. HARTMAN, Secretary E. B. NUTT, Vice-Chairman

Utilizing the Plumber Dealer as a Company Representative To Receive Applications for Gas Service

By H. R. Jesper

(Sponsored by Customers' Relations Committee)

IN June, 1929, The Brooklyn Union Gas Company, Brooklyn, N. Y., adopted a dealer-cooperation plan whereby certain plumbers were authorized to act as representatives of the company for the sale of gas appliances. Provision was made in this plan for aiding the dealer in his merchandising work by consigning to him appliances for display in his store, by assisting him with advertising material, by enlisting him in sales training classes, and by bringing before the public through the medium of widespread advertising the message that a dealer who displays the "Great American Servant" symbol sells only approved gas appliances. Since the inception of this plan purchases of approved gas appliances by dealers have exceeded a million dollars. In addition to this over one-half million dollars' worth of appliance sales have resulted from leads received from these dealers by our regular sales force.

Besides obtaining a commission on their appliance sales, and additional compensation for leads turned in, the plumbers are benefiting to the extent of the pipefitting work which the installation of the appliances involves. The company makes no appliance installations itself. The success achieved with the dealer-cooperation plan is attributed to the wholehearted support given it by the dealers in their confidence of the benefits accruing to them.

Our Queens District territory, which covers an area of 72 square miles, has been one of the most rapidly growing communities in the United States during the past decade. At the present time, we supply 225,000 consumers in this district.

As the number of consumers increased, consideration was given to the possibility of utilizing the offices of some of our plumber dealers for the convenience of the public in the payment of their gas and appliance bills, and for the receiving of contracts for gas supply and orders for any other gas service since only three company branch offices were maintained in the district.

This plan was accordingly begun with a trial of two Representatives on March 1, 1932, with the thought that if the trial proved successful the plan would be extended. At the present time we have increased the number of company representatives in the Queens section to five.

In choosing each representative, his location in a community, the general appearance of his place of business, and his financial responsibility were governing factors. When a dealer was found satisfactory to us and he was approached with the proposition, we never found any reluctance on his part to accept the responsibility. He immediately saw the possibilities whereby he would benefit by such an arrangement.

Our Queens District is made up of numerous communities and it is always our aim to pick a representative centrally situated in each locality. Thirty days prior to the establishing of a representative we notify our customers of this

EXHIBIT 'B'.

This bill may be paid at the premises of Mr. (Space for name and address of Plumber Dealer) who is our Special Representative in your locality.

The Brooklyn Union Gas Co.

arrangement (see exhibit A), and also during a period of six months we attach pasters to bills (see exhibit B) of the customers who are in the locality of the Representative, notifying them that for their convenience it will be possible for them to pay their gas bills at that location.

Upon the establishment of a company representative, a branch office employe is assigned for a period of thirty days to instruct the personnel of the plumber dealer in the manner of receipting bills, executing orders and contracts, recording cash received and reporting of cash each day. We have experienced no difficulty and we have found in all cases that the special representative's employes have been able to handle all matters in a very efficient manner.

This arrangement has eliminated the necessity of long travel to our own branches, and in a great many cases has made it possible for customers to pay their bills in person, rather than by mail enclosing a check or money order.

This arrangement has been beneficial to our representatives in that it has caused people to come into their establishments who never visited them before. They have become better known in their neighborhoods and have received considerable additional plumbing work due to the gas customers' contact with their offices. Each of these representatives is well pleased. In fact, the company is receiving inquiries from other plumber dealers requesting that similar arrangements be made with them.

This plan is a very economical one as the company is put to no expense except for a telephone service, which is used solely for transactions between the representative's office and our own branch office.

We have found these representatives very enthusiastic and cooperative. Each has assigned a section of his establishment to this particular activity, using space available for a cashier's counter. A sign is placed over the counter, and the win-

EXHIBIT 'A'.

To Our Customers

The enclosed bill may be paid at the premises of Mr. (Space for Name and Address of Plumber Dealer.) - - - - - -

For your convenience, we have arranged with Mr.—— to accept payment of and receipt your bills for our account. He will also receive and transmit to us certain orders pertaining to our service. These orders will be given as prompt and careful attention as if received directly by us.

Mr.—— has on display a complete line of approved modern gas appliances. He invites you to visit his store at any time between the hours of 8 A.M. and 5 P.M. His phone number is ——

The Brooklyn Union Gas Company

dow of the establishment is lettered with the statement that payments on gas bills will be received. The plumber has his stenographer or clerk receipt for any money received and accept any orders from the customer.

Each day's receipts are listed on a report in duplicate. The original, together with the cashier's coupons, are forwarded to the branch office. The duplicate is retained by the representative. The representative makes up his daily cash receipts, making a duplicate deposit slip, and deposits the money in a bank which is designated by this company. The bank receipts his duplicate deposit slip which in turn is forwarded to the branch office as a receipt for the money deposited.

All orders given by customers in connection with the company's service to them, such as the locking and unlocking of meters, are transmitted to the branch office where they are executed in the regular manner.

As stated before, this plan has worked to the mutual advantage of all concerned. It has increased the actual and potential business of the representative; it has provided a more convenient method for payment of bills for a larger number of customers, in addition to demonstrating to them the company's interest in improving service; and lastly the company benefits by having its customer relations further enhanced, to say nothing of the additional gas load obtained from the appliances sold by the dealers.

It is encouraging to state that our representatives have performed all the work that was expected of them in a very creditable manner. Our customers have expressed their gratification with the establishment of these special representatives and they are appreciative of the facilities which we have inaugurated.

Miles E. Brown

MEMBERS of the Accounting Section learned with deep regret of the death of Miles Elton Brown, superintendent of branches of The Brooklyn Union Gas Company, who died January 22 after a long illness.

Mr. Brown, for many years an active participant in affairs of the accounting section, entered the employ of the Jamaica Gas Light Company on July 12, 1897, shortly after it had been acquired by The Brooklyn Union Gas Company. He rose to the post of chief clerk of the Jamaica company, and on March 1, 1924, was promoted to superintendent of branches of The Brooklyn Union.

News of his death brought a keen sense of loss to his many friends and fellow-workers. He was a member of the American Gas Association, the American Management Association, Brooklyn Chamber of Commerce, Queens Chamber of Commerce, and Upland Park Civic Association. He was a former president of the Management Club of the Brooklyn Chamber of Commerce, and had served on the Long Island Highway Connections committee of the same organization.

Mr. Brown was the son of Miles A. Brown, who will be remembered as a former manager of Citizens' Branch. The elder Mr. Brown entered the employ of the Union Gas Light Company, another of the companies acquired by The Brooklyn Union, on October 1, 1883. After twenty-four years' service he was retired on December 1, 1907. He died at an advanced age in 1926.

BOOK REVIEWS

Manuel de Chimie Gaziere. Methods and Procedures in Use in Assays and Analysis in the Experimental Laboratory of the Paris Gas Company. By Emile Sainte-Claire Deville. 2nd Edition, revised and enlarged through the chemical research work done by the Paris Gas Company with the collaboration of Paul Sainte-Claire Deville. 238 pp. 8¼" x 5½". Price, approximately $2.00. Edited by Dunod, 92 rue Bonaparte, Paris VI.

The present edition shows the methods of examination and analysis used by the experimental laboratory of the Paris Gas Company for developing the qualities or faults of various products of the distillation of oil. A great many of the new methods are developed as a result of the experimental work at the plant and have not been published elsewhere. Throughout methods have been adopted facilitating quick determinations with great precision and permitting many determinations to be run in short order.

In the second edition which is presented now, the original text has been completely revised and a number of important additions made. Among others one might mention the long study on the picric acid method of treating naphthalene, new information on the influence of various factors in determining the volatile matter in distilling coal, suggestions of new methods for analysis of tar including determinations of total sulfur, cyanogen sulfocyanic acid and total iron in purifying materials.

This manual is more complete than the previous edition and should render very valuable services to engineers and chemists in gas works and coke oven plants and in general to all those interested in the chemistry of combustibles.

—C. GEORGE SEGELER.

New Jersey Gas Association

THE annual convention of the New Jersey Gas Association will be held at the Walt Whitman Hotel, Camden, New Jersey, on Thursday, March 16. It is expected that between 300 and 400 representatives of the gas industry from New Jersey and neighboring states will attend this one-day meeting.

Colonel E. C. Rose, vice-president of Public Service Corporation of New Jersey, will deliver the address of welcome. Arthur Hewitt, president of the American Gas Association, will speak on "The Gas Industry." A description of the new air-cooled gas refrigerator will be presented by F. E. Sellman, vice-president, Electrolux-Refrigerator Sales, Inc. An address by Theodore J. Grayson, professor of finance, University of Pennsylvania, will conclude the morning session.

C. E. Muehlberg, assistant general superintendent, Consolidated Gas Company of New York, will discuss problems encountered in servicing customers' appliances. A paper on "House Governor Performance" will be presented by A. W. Johnston, Jr., engineer of the Harrisburg Gas Company.

Conrad N. Lauer, president of The Philadelphia Gas Works Company and chairman of the American Gas Association National Directing Committee of Executives, will discuss merchandise sales plans of the industry. Miss Clara H. Zillessen, of the Philadelphia Electric Company, will present a paper on a home service subject. A dialogue which will illustrate effective methods of selling gas house heating will be presented by V. F. Stanton and A. B. Becker, of Public Service Electric and Gas Company.

Officers of the association are John D. Alden, Jersey Central Power and Light Company, president; F. A. Lydecker, Public Service Electric and Gas Company, first vice-president; E. J. Menerey, Peoples Gas Company, second vice-president, and Herbert E. Cliff, Public Service Electric and Gas Company, secretary-treasurer.

Dr. Drinker Studies Methylene Blue Treatment

IN view of the interest in the use of methylene blue for resuscitation purposes, the following statement received at A.G.A. Headquarters from Dr. Cecil K. Drinker, Harvard Medical School, 55 Van Dyke Street, Boston, Massachusetts, will be of interest to safety directors in the gas industry:

> "Ever since the California case treated with methylene blue I have had many requests for information in regard to it. Work now in progress will show definitely whether the procedure has usefulness to the Gas industry, and I will take care to let you know what I think about the issue when we are in a position to judge. It was extremely unfortunate that so much newspaper publicity occurred prior to the extremely simple experiments which are necessary to demonstrate the real usefulness of the procedure. At the moment all I can offer is my opinion that there may be some profit in the injection, but this is not certain at the present time."

COMMERCIAL SECTION

WALTER C. BECKJORD, Chairman J. W. WEST, Jr., Secretary N. T. SELLMAN, Vice-Chairman

Trend of Water Heater Sales From the Manufacturer's Viewpoint*

A. M. Apmann

By A. M. Apmann

Cleveland Heater Company

THE manufacturer of gas appliances is in business for his health providing that the returns from the sale of appliances are sufficient to keep body and soul together. Today, it is an open secret that the appliance manufacturer is ailing and is not even receiving the return from the sale of his appliances which make it possible to remain healthy. Like all ailing persons, those who have a cold or grippe or similar ailments which do not necessitate remaining continuously in bed, the appliance manufacturer is beset on all sides by well-meaning friends, each with his own remedy. The common cartoon of the man with a cold receiving suggested remedies from all his friends and piling the boxes and bottles of pills, liquid, ointment and other remedies in great stacks on his desk table is very closely met by the graveyard of the manufacturer's development department. Were we to take a trip through the development department of a typical manufacturer today, we would find in every case the same condition. Appliances which have been through the weather and storm of years with only slight modifications are undergoing major operations to meet the suggestions of well meaning friends who purchase appliances from the manufacturer. The operation in the development department will be quite successful but can the friend be sure his ideas will have the desired effect on improving the quality or salability of the appliance in that territory. Then there are the frustrated hopes in the attempts to copy designs and models of other manufacturers that have been no more successful in weathering the customer's needs, but who are creating a great deal of discussion about the value of these latest developments.

Another "remedy" is the use of a name coined especially for the individual utility or jobber. A manufacturer in the final analysis can continue in business only by customer acceptance of his trade names or company name. With the Blue Star of the Testing Laboratory as a background and the local utility acting as distributor or retail outlet, the use of a special trade name can add nothing to the value of the appliance. It does, however, handicap the sale of the same appliance in the outlying territories where a different retailer may be selling it. However, one of the most widely advertised experiments of this kind ended by abandoning the private trade mark and selling the same appliances, ranges, water heaters, boiler and furnaces under the manufacturer's name. After the change the sales increased over 50 per cent.

No matter who makes the sale to the ultimate consumer, it is the gas utility which supplies the gas to the heater, it is the plumber who makes the installation and in many cases, the jobber who carries the appliance between the manufacturer and the plumber in the sale. The need or desire for having one appliance labeled with two to eight different names, is fatally uneconomic if not, actually foolish. Experience has shown that where cooperation exists between all the different outlets for an article, whether it be locomotives or water heaters, the sale of an article under a single name, will be greater than if a customer is forced to choose between the same article under two or more different names. In addition, the selling cost when the efforts are divided, are invariably higher and the net revenues less. The selling of special brands is not a benefit to the manufacturer and certainly a detriment to both utility company which merchandises and the jobbers operating in the territory. A more liberal attitude is needed on the part of all three of these parties, so that combined efforts can be made at the ultimate target, namely the pocket book of the consumer. In the development of a mark for any article, we find the same conditions:

1. The promotional stage by a single manufacturer whose name becomes identified with article;

2. The stage in which competition begins, and

3. The gathering together of all the loose ends into a concrete whole which is based on proper and sound economics.

Coordinated Selling Is Needed

More than anything else, the development of gas refrigeration lay in the fact that there was but a single appliance to be sold and all efforts by the gas utility had to be made on a single item. The name "Electrolux" unhappy as it may seem to many of us in the gas industry will always remain the symbol of the gas refrigerator. The "Pup" will always be the symbol of the gas-fired boiler. Leaky and dripping faucets, uncovered supply lines and similar errors of installation have given the automatic instantaneous water heater a bad name for domestic purposes, regardless of the fact that when properly installed and proportioned for an installation, it is probably the most efficient appliance which could be used for this service.

When the trend of water heater selling has been coordinated so that in each territory the products of a single manufacturer will be sold alike by all the outlets under a single name, real progress will be made and far better results achieved.

Another friend insists business will increase if the manufacturer becomes a banker, that is, builds the appliances and carries the account over a long term. With the enormous quantity of unused credit available today and the stable organizations specializing in the financing of household appliance sales, it should be unnecessary to request that the manufacturer compete in this market.

At this corner is a cheerful friend who suggests that the cure lies in reducing prices and a reduction of even $1 will open a new strata. But with this reduction there must be added resale help, possibly advertising allowances and even new campaign features. Does price cutting help? Who suffers by the reduction? The answer to these two questions is simple. Purchases out of the excess or marginal income are made deliberately and with lessened marginal income, it is common knowledge that these sales are not being made. The manufacturers with the deepest cuts are no busier than those who resisted the urge. Any price cut affects the sales effort as the manufacturing cost is set by the specifications and requirements of the Testing Laboratory. The expense allowed then for selling is reduced and the net result is disappointment.

So it goes with every method suggested but attention by the doctor, who will prescribe a sound coordinated development based on fundamental economics and advancement in the art of automatic water heating. None of us are in a position to throw the first stone, for we all have been attacked by the insect who urges us on to

*Address before Third Southwest Natural Gas Sales Conference, Baker Hotel, Dallas, Texas, February 24, 1933.

activity in climbing over the fence where the pasture seems greener. The result is, that the pasture is not greener and in the meantime each manufacturer as an energetic competitor has been able to take away some of his competitor's business but not along sound and proper basis.

Within the past ten days, I have had the pleasure of outlining before one of our allied sales groups, a comprehensive analysis of the present day market for automatic hot water service by gas. The competition was analyzed, the advantages of gas shown and means suggested for improving the situation as far as the gas industry and gas appliance manufacturers are concerned were presented. The plan was based on sound fundamental grounds of cooperation between the Association of which we are all a part, the manufacturers of appliances and the utility and dealers who sell the appliances. In this plan, each of the three groups have an important and definite function and duty. We are all inter-dependent in this activity and must operate in this manner to get the best results. Today, I am considering for granted the fact that everyone realizes that cooperation is not only desirable, but absolutely necessary and considering only the efforts which the manufacturers are or should be taking in furthering this activity.

The manufacturers would rather build their business on proper lines and leading to a common end. One of the soundest fundamentals on which the manufacturer would like to operate, is that of improving the quality of the appliance. In the first days of the A. G. A. Testing Laboratory, the rejection of so many appliances immediately raised the standing of practically all the appliances. It would be unnecessary to point out that the best appliance built before the days of the Testing Laboratory, is inferior to the poorest appliance which is now able to pass the minimum requirement. However, with the better understanding of laboratory methods and test procedure, the tendency is to build an appliance which will just pass the minimum requirements of the Laboratory. Obviously, in order to better the service to the customer and reduce the operating cost, which in the long run is an indication of the value of an appliance, the requirements for gas appliances and particularly storage water heaters, must be increased.

How to Tell the Trend

On all sides, gas for automatic hot water service is confronted by competitive fuels. The inconvenience of coal, the odors of oil, are offset by the claims of lower operating cost. But far more serious than these, is the competition of the efficient and magical source of energy, electricity. To the electrical industry everything is beyond consideration when compared with the magic of its operation. The increased cost of operation is trivial, and we are told that when the time is right, the electrical industry will step in and take over all domestic uses for fuel. However, this can be forestalled and prohibited by proper applications of sound principles of manufacture and construction of gas appliances. In this respect, we must look to the utility and jobbers who are competing for this business. They must have instilled in them the firm conviction that only by thoroughly well-built appliances, fully safeguarded and operating with a minimum of attention, can the gas industry be put in such a position that it will be safe against all types of competition. Obviously, increasing quality means increased cost, but so does that careful diagnostician, the doctor. But this cure is certain!

What are the trends other than those of the desire to have an ultimate objective which can be properly completed by close cooperation? It would be very difficult to tell accurately the trend if we did not have available the list of Approved Appliances of the Laboratory over a period of years. If we take some point of the year as for example January 1, and count the appliances of these types which have been approved, we can prepare a fairly reasonable idea of the trend in water heating. The listings show three types of water heaters; the circulating tank heater, the instantaneous heater and storage automatic water heater. By segregating each of these, we can find how the appliances have changed over a period of years.

Taking as a base, the approval list for January 1 of each year since 1929, Table 1 shows the change in the number of approved tank heaters. This shows that from 1929 to 1932, there was an increased number of manufacturers with a constant increase in the number of tank heaters approved. Up to January 1, 1931, practically all of these heaters were of the type for residential service. However, at that time, a number of larger capacity heaters made their way into the market and from that point on, the development has been along two lines, those below 50,000 B.t.u. input per hour and an increased number of those of the larger sizes. In the table showing the change in tank heaters, these values are given showing in addition to the number of manufacturers and the number of heaters, the average recovery rate in B.t.u. per hour on a natural gas basis and the trend in percentage in the number of heaters and the recovery rates. It is interesting to note that the recovery rate of tank heaters increased practically steadily up to January 1, 1932, and at that point, the recovery rate of the domestic size tank heater suffered a drop back to the point where it was in 1930. Inasmuch as the tank heater is merely a manually controlled appliance for the emergency supply of hot water, it is evident that the drop in recovery rate is not based on the need of customer, but rather on the successful efforts of the utilities and jobbers in getting the manufacturers to lower their cost of appliances. The prices charged by the manufacturer for these types of heaters remained practically constant for a period of years up until the early part of 1932, when in an effort to maintain volume price cutting became serious. This can only be justified by a reduction in the capacity, that is, the recovery rate of the appliance and is a condition which only the utility and jobbers purchasing and selling appliances can remedy. They must maintain their stand for quality and capacity and forego the opportunity of lowering a price which is not commensurate with the quality or reduction in the equipment purchased.

Table 2 shows a rather usual trend inasmuch as the tendency is for a gradual elimination of this type of appliance. It is to be regretted that such is the case, but having given the dog a bad name, everyone seems to be carrying on all efforts to reduce both the number of heaters and the recovery rate to a point where the service rendered can be adequately carried on by

TABLE 1

CIRCULATING TANK HEATERS

Year	*Manufacturers*	*Heaters*	*Recovery Rate B.t.u. Per Hour Natural Gas*	*Trend 1929—100% Heaters*	*Recovery*
1929	30	159	26680	100.0	100.0%
1930	40	224	32100	140.9	120.3
1931	41	255	34200	160.4	128.2
		257	34800	161.6	130.4
1932	50	288	35600	181.1	133.4
		298	38700	187.4	145.1
1933	47	323	32100	203.1	120.3
		333	38650	209.4	144.9

TABLE 2

INSTANTANEOUS HEATERS

Year	*Manufacturers*	*Heaters*	*Recovery Rate B.t.u. Per Hour Natural Gas*	*Trend 1929—100% Heaters*	*Recovery*
1929	5	22	144300	100.0	100.0
1930	5	26	129500	118.2	89.7
1931	6	29	122300	131.8	84.8
1932	6	30	119900	136.4	83.1
1933	5	22	119200	100.0	82.6

TABLE 3

STORAGE HEATERS

Year	Number of Heaters Approved	Number of Heaters Identified	Storage Gallons	Recovery Rate B.t.u. Per Hour Natural Gas	Recovery Rate Per Gallon Storage
1929	133	116	35.5	26318	742
1930	316	229	34.5	28160	816
1931	485	356	34.1	29170	855
1932	621	410	32.4	28640	884
1933	775	619	33.0	27360	829

Trend 1929—100.0% Storage	Capacity	Recovery Rate	Recovery Rate Per Gallon
1929	100.0%	100.0%	100.0%
1930	97.2	107.0	110.0
1931	96.1	110.8	115.2
1932	91.3	108.8	119.1
1933	93.0	104.0	111.7

TABLE 4

Year	Heaters on List Jan. 1	Remaining 1933	Obsolete
1929	133	57	57.1%
1930	316	135	57.3
1931	485	217	55.3
1932	621	426	31.4

circulating tank heaters or by storage automatic heaters.

Table 3 shows the number of approved storage heaters, the number of heaters which could be identified as to capacity of the storage tank and their recovery rate, the average storage capacity of all these heaters, the average recovery rate in B.t.u. per hour based on the natural gas rating and the recovery rate per gallon. There was a very definite trend in this development and approval up to the early part of 1932. This was for a reduction in the tank capacity and an increase in the recovery rate. In fact, the recovery rate based on the nominal storage capacity shows an almost uniform increase year by year. Was this development wrong or is the present trend of development as shown by the reduction in the recovery rate per gallon during the year 1932, the correct answer? I think in this particular instance, the effect of one remedy most thoroughly shows itself. Everyone agrees that only those heaters should be sold customers which are economically correct. In some cases small capacity, relatively high recovery heaters are necessary. In other cases, slow recovery large storage capacity heaters are most desirable and will operate most economically. However, as long as the limitations of each type of heaters were definitely known, progress was made in their sale and satisfaction on the part of the customer resulted. When, however, these limitations became lost, then definite difficulties resulted and we now see the unique vice of a large storage capacity tank being used with not only slow recovery, but several stages of intermediate recovery and fast recovery. In cases like this, it is probably very much more economical to use the smaller sized storage heater with a faster recovery than one of the large size tanks with the intermediate input. This is one of the ailments which has been "cured" by an excessive kindness instead of a thorough diagnosis of the case and a resort to proper surgical treatment.

How many of you have heaters which you purchased in 1929? How many in 1930? How many know how many of these heaters are obsolete, that is, missing from the January 1, 1933, Approval List and in some cases orphans? How many are trying to merchandise these orphans along with modern everyday equipment?

Again referring to the same source of statistics, it is found that practically one-third of the heaters only one year old are obsolete. The data appear in Table 4.

Aside from the seriousness of obsolete appliances in utility and jobbers stocks is the waste of development and testing expense which is an important item. It would be interesting to determine how much of this expense is directly attributable to "remedies" of our well meaning friends. Surely a great deal must result as the manufacturer would hesitate considerably in promoting new appliances unless assured of some selling support.

The remedy for this application of appliances is not lying in the hands of the manufacturer. If the manufacturer provides the utility and jobber with economically operating appliances suited to the needs of each individual customer, furnishes adequate sales helps, training of the retail sales personnel and service department, it is then the duty of the utility company to make the surveys on various classes of customers to determine what is the most proper appliance to be used on their line and sold to the various classes of customers. If each carries out his end, the trend will be the one desired—Gas for Water Heating.

Laboratory Starts Research On Welded Pipe Joints

AMONG research projects under investigation at the A.G.A. Testing Laboratory in Cleveland, Ohio, is that involving a study of arc-welded pipe joints with a view of developing a method of making non-destructive field tests which will indicate the relative strength or serviceability of the weld and the adjacent metal. It is felt that there is a distinct need for such a method, since the only one now adaptable for field use requires a test piece to be cut from a finished weld with the result that a patch weld must be made where the coupon was removed. In effect, the destructive test is a check on the quality of workmanship and is designed to keep the welders maintaining an average of perfection which will insure a minimum of faulty welds. This practice, however, does not insure against the occasional defects which may cause a rupture.

The principle of magnetic testing was selected from the many proposed methods as being the most readily adaptable to field conditions on pipe lines, after a thorough survey had been made of the conditions surrounding the construction of distribution and transmission lines.

An instrument has been developed in the A.G.A. Laboratory which differs from other experimental equipment used in the past and which gives promise of revealing the solidity of the weld within reasonably close limits. Although the study has not yet progressed to the point where definite conclusions can be drawn as to the adaptability of the instrument under all conditions, the engineers in charge of the work feel assured that the method has possibilities beyond any of the others that have been examined.

The interpretations of the readings given by the instrument have been found to check closely with the results obtained from tensile tests and x-ray examinations of the weld area.

The work has so far been confined to four-inch pipe, although preparations are now under way to extend the study to larger diameters and longer lengths, since either of these variables may affect the translation of results to some extent.

Contented Customer

Following recent announcement of a substantial reduction in rates charged for service in Bristow, Okla., by the Oklahoma Utilities Company, the company received six dozen carnations as an expression of appreciation from a contented customer. The customer was the Bristow Floral Company, which acts upon its own suggestion to "say it with flowers."

HOME SERVICE COMMITTEE

RUTH KLEINMAIER, Chairman — JESSIE McQUEEN, Secretary

Home Service Meeting at New England Gas Convention

SIXTY home service directors and executives in New England gas companies were in attendance at the home service luncheon held in connection with the convention of the New England Gas Association at Boston, February 17. Mrs. Carolyn Webber Bixby, New England representative of the Roberts & Mander Stove Co., presided as chairman and introduced W. C. Beckjord, vice-president of the Boston Consolidated Gas Company, who extended his greetings to the group. Among other things, Mr. Beckjord pointed out that he felt the curtailment of home service work at present, on the part of executives, indicated short-sightedness in not realizing it was of particular use in giving needed services to customers.

Mrs. Bixby summarized the results of a 19-point questionnaire which had been sent to all home service directors in New England regarding the attitude of the woman customer toward gas and the place of home service in a gas company. The comments in regard to gas, as a whole, were favorable pointing out gas as a convenient, fast and clean fuel, and gas equipment adequate, attractive, efficient, dependable for controls and reasonable in price. The service, they felt, was satisfactory in general and one point was made that women preferred not to have too many people sent on one repair job, preferring one efficient call.

Answering a question on competitive fuels, the customers' comments were that electricity was the only real competitor; coal being slower, requiring more attention, and causing more dirt, while oil caused too much care and trouble, gave poor browning in baking and the odor and smoke were objectionable.

The home service questions stated a noticeable increase in calls from customers for assistance in the use of appliances. Class attendance has increased because of the need for homes to operate on a reduced budget and the women needing more assistance as a result. Home service directors are meeting present limited family budgets by teaching fuel economy and food economy to fit present conditions; others were giving information on budgeting and marketing.

Regarding cooperation with sales, all directors reported their aim in that direction was to assist as far as possible in advising customers about new equipment in home calls; sales floor demonstrations; salesman's classes or suppers with talks; invitations extended prospects to attend classes; classes for organized clubs on the sales floor or in home service auditoriums; service of all major sales with calls in the home.

A few directors reported their attendance at sales and service meetings in order to be well-informed on the sales policies and activities of the company and also in return to give pointers to salesmen from their own home contacts. A number of directors reported assistance in trade-dealer work. All directors reported a greater concentration on equipment information in class demonstrations.

The subject of complaints and servicing was considerably at variance showing the problem there, as to how service calls should be conducted, whether they should all be taken care of first by the service man or whether they should be routed in the company office with some being handled directly by home service people.

I. T. Haddock, president of the New England Gas Association, commented on the significance of the replies and stressed the importance of home service in meeting today's problems in merchandising. Mr. Haddock introduced Arthur Hewitt, president of the American Gas Association, who strongly endorsed the value of home service activities and quoted the figures which proved its growth in his own organization. In 1925 the total number of contacts made by home service in Toronto were 8,221; in 1929 this had grown to 19,871; in 1932 the total was 38,456.

On the general sessions program, an interesting feature was a dialogue entitled "A Woman's Point of View." This was given by the home service department of the Worcester Gas Light Company, Worcester, Mass., with Mrs. Lyda Flanders, the director, taking the leading part. The others in the cast were Mrs. Eleanor Kingsley and Miss Alice Morrison. The time and place was a Saturday afternoon with three women sitting around a bridge table in the living room waiting for the fourth member to arrive. Following a luncheon which had been much enjoyed, the question arose as to how the hostess could stay in an office all morning and be able to serve such a fine luncheon on returning home. Following the answer that the luncheon had been cooked in a time-controlled oven, Mrs. Kingsley, as an electric range prospect, and Miss Morrison, as a range oil burner owner, began to ask questions about the advantages of the various fuels. The dialogue considered these points in a most interesting fashion and at the end everyone felt that Mrs. Flanders, representing gas as a fuel, had met every argument and that gas and gas equipment were superior in cooking processes.

Domestic Gas Appliance Course at New York University

A COURSE of study in gas equipment was instituted a year ago at New York University under the direction of Mrs. Freda Winning, head of the home economics department. Six lessons were devoted to this program. Lecture and laboratory work were planned by Mrs. Winning; T. H. Schleuning, service engineer of the Consolidated Gas Company of New York; and Ruth Soule, home service director of The Brooklyn Union Gas Company.

This course was considered so successful by the University that it requested to have it repeated this year and the classes started on February 3 with Mr. Schleuning in charge. The program of the course follows:

I. Gas—its production and use; house piping; meters; and flues. A. A. Pihlman, Engineer, Consolidated Gas Company of New York.

II. Gas Ranges and Thermostatic Controls. T. H. Schleuning, Service Engineer, Consolidated Gas Co. of New York.

III. (a) Oven Heat Distribution. Ruth Soule, Home Service Director, Brooklyn Union Gas Co., Brooklyn, N. Y.
(b) Use of Newest Automatic Ranges. Althea Lepper, Home Service Director, Consolidated Gas Co. of New York.

IV. (a) Gas Refrigeration. W. S. Walker, Engineer of Utilization, Consolidated Gas Co. of New York.
(b) Use of Gas Refrigerators. Home Service Department, Consolidated Gas Co. of New York.
(c) Water Heating and Incineration. H. E. Haby, Engineer, Consolidated Gas Co. of New York.

V. (a) House Heating—Gas, Coal, Oil. W. Andrew Scully, Engineer, Consolidated Gas Co. of New York.
(b) Heat Controls. E. C. Rieger, Minneapolis Honeywell Regulator Co.
(c) House Cooling. Margaret Ingels, Engineer, Carrier Engineering Corp.

American Home Economics Convention

THE annual meeting of the American Home Economics Association will be held in Milwaukee, Wisconsin, on June 26-30, 1933, with the Hotel Schroeder as convention headquarters. "Home Economics in a Modern World" has been chosen as the general theme for the meeting.

At the annual meeting of this association, a year ago in Atlanta, about 1,000 home economists from schools and colleges, hospitals and commercial firms were in attendance.

An excellent program usually is given during this convention and a commercial exhibit by magazines, food companies, clothing companies and equipment companies is held in connection with it.

Home Service Conference

A COMBINED course in domestic gas appliances and Home Service Conference, under the auspices of the American Gas Association Home Service Committee, will be held in New York City the weekend of March 25-27. The two days' program will be devoted to the technical application of gas for domestic uses and discussions relating to Home Service Department procedure and activities. Detailed announcements soon will be sent to member companies.

Gasettes

NIAGARA-HUDSON—Margaret Nevins, director of home service in the Niagara-Hudson properties, with her office at the Syracuse Lighting Company, Syracuse, New York, reports the installation of home service in the new service center of the Syracuse Company with an auditorium of a seating capacity of 500. The main activity during the past few months has been the home service classes which grew from an attendance in September of 300 to 1,500 by Christmas time. One day a week a special class is given for women employees with an attendance of 100. Miss Nevins reports that as a result of the interest shown by city home economics teachers in the subject matter given in evening classes she was requested to give a lecture demonstration for a state-wide meeting of home making and vocational teachers held in Syracuse in December.

WASHINGTON NEWSPAPER SCHOOL—Ruth Sheldon, home service director of the Washington Gas Light Company, Washington, D. C., conducted a cooking school sponsored by one of the negro newspapers in Washington. The attendance averaged more than 500 women each night at a two-hour demonstration. Miss Sheldon reports unusual attentiveness in the audience and the wide advertising of the schools through the colored churches, schools and clubs.

SANTA MONICA, CALIFORNIA—Katherine Rathbone, home service director, Santa Monica District, Southern Counties Gas Company, states in her annual report a noted increase in the numbers of women receiving home service assistance in 1932 over previous years. This included cooking school attendance, the number of new people enrolled, again in outside contacts and an increase in distribution of recipe sheets, in all making the increase in total number of contacts 16,255. Miss Rathbone feels that this increase is partly due to the smaller budgets upon which women are maintaining their homes, with the appreciation that they need to spend more wisely and are coming for assistance to the home service department. Miss Rathbone reports a campaign through the three gas companies in Southern California featuring clock-controlled ranges, these ranges meeting with considerable success throughout this section of the State.

KITCHEN PLANNING FILM—Jane Callaghan, kitchen consultant of the Brooklyn Borough Gas Company, Coney Island, New York, has prepared a strip film of about forty illustrations on kitchen modernization work in their company. Miss Callaghan recently gave a talk showing this film before one of the women's clubs of the Public Service Company of New Jersey, and gave a similar talk before one of the women's clubs in the Brooklyn Borough Gas Company.

ALL-GAS KITCHEN—The Brockton Gas Light Company, Brockton, Mass., has announced to its customers a new modern automatic all-gas kitchen on the display floor in the gas company building. A preview of this kitchen was given Friday night, February 24.

Sales and Promotional Move Designed to Aid Domestic Field

WHAT promises to be one of the most intensive programs of sales and promotional effort in the domestic field in the history of the gas industry is being planned under the direction of the National Directing Committee of Executives, created especially for this purpose by the American Gas Association.

Conrad N. Lauer

Conrad N. Lauer, president of the Philadelphia Gas Works Company, is chairman of the committee to lead this campaign, which is expected to stimulate business conditions in the domestic heating and cooking market throughout the United States. Leading gas utility executives of the country have already indorsed the basic plans of this drive as outlined by Mr. Lauer.

Leaders of the gas industry have felt for some time that this particular phase of its activity has been too conservatively handled as a whole, and the industry has failed to utilize highly organized methods of informing housewives and others of the economy and efficiency developed in modern gas appliances for the home.

Recently, upon the recommendation of a subcommittee, the National Directing Committee of Executives employed the advertising firm of N. W. Ayer & Son to outline a program of coordinated advertising and sales promotion effort, which will be placed before Mr. Lauer's committee at an early date.

"Nobody believes that it is possible to standardize on the policies and practices of the member companies of the American Gas Association in developing the sale of gas," Mr. Lauer explained, "but there certainly has been an evident feeling that more aggressive and better coordinated sales policies are essential to the gas industry.

"The program I have in mind would be aimed not to supplant, but to supplement and round out the present advertising and sales activities of member gas companies with those of a promotional nature, telling and selling the story of modern gas service to the public in a unified way."

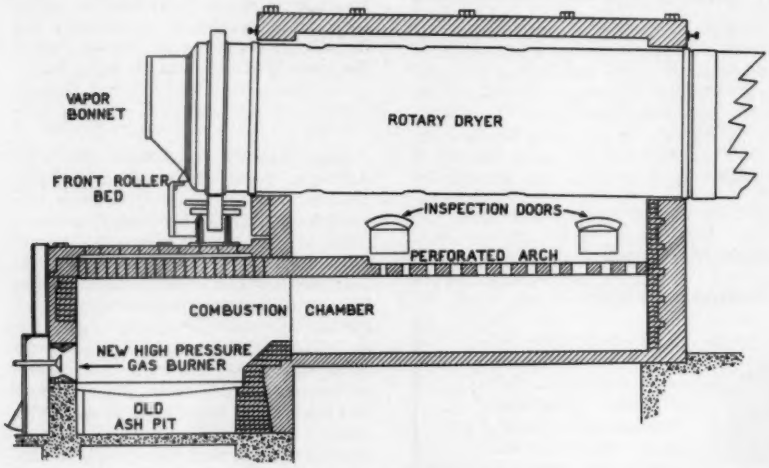
INDUSTRIAL GAS SECTION

E. L. WILDER, Chairman C. W. BERGHORN, Secretary F. B. JONES, Vice-Chairman

Sewage to Fertilizer in Gas-Fired Rotary Dryers

By J. B. Nealey

THE disposal of sewage is an ever-constant and knotty problem with every city, and very expensive too, so whenever a process presents itself that will turn a deficit into a profit, wholly or in part, it is sure to be received with great interest. Just such a process, consisting of turning sewage into fertilizer, has been adopted by the city of Houston, Texas, and a plant, built for its execution, was started last year.



Sectional View of Rotary Dryer

Briefly the process consists of running the raw sewage from the city through aeration tanks and settling out the solids which are then chlorinated, filtered and dried in huge gas-fired rotary dryers or kilns. Organic nitrogen fertilizer results and the whole cycle, from sewage to fertilizer, requires less than 12 hours. The capacity of the plant is 15 or more tons of fertilizer daily and it costs less than $250,000. Of course, the raw sewage is aerated and partly dehydrated in the old activated sludge system that has been operated for years.

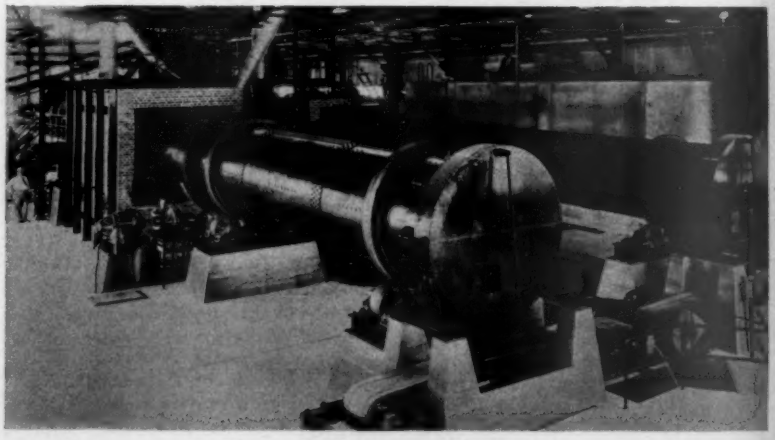
The aerating tank is of concrete and is 385 ft. long and 10¾ ft. deep with a free board of 1 ft. and contains 7 channels 18 ft. wide and five 9 ft. wide. At the end of these channels are four concrete settling tanks, each 65 ft. in diameter and 15 ft. deep, where the solids settle out and the clear water overflows into the river. Three giant compressors supply air at 5 lbs. pressure to the aerating tanks through a series of 12 in. pipes or manifolds running the entire length of the tanks. These feed 4 in. distributing pipes with 2 in. feeders on 4 ft. centers, which extend down to the bottoms of the tanks and deliver air through filter plates for sewage. The volume of raw sewage running through here daily will average in the neighborhood of 13,000,000 gallons.

The solids in the settling tanks are drawn through ports in the bottoms and a part is returned to the aerating beds to inoculate the raw sewage for the biological treatment it receives here. This aeration or activation treatment consumes 6 hours and 2 hours more are used up in the settling tanks.

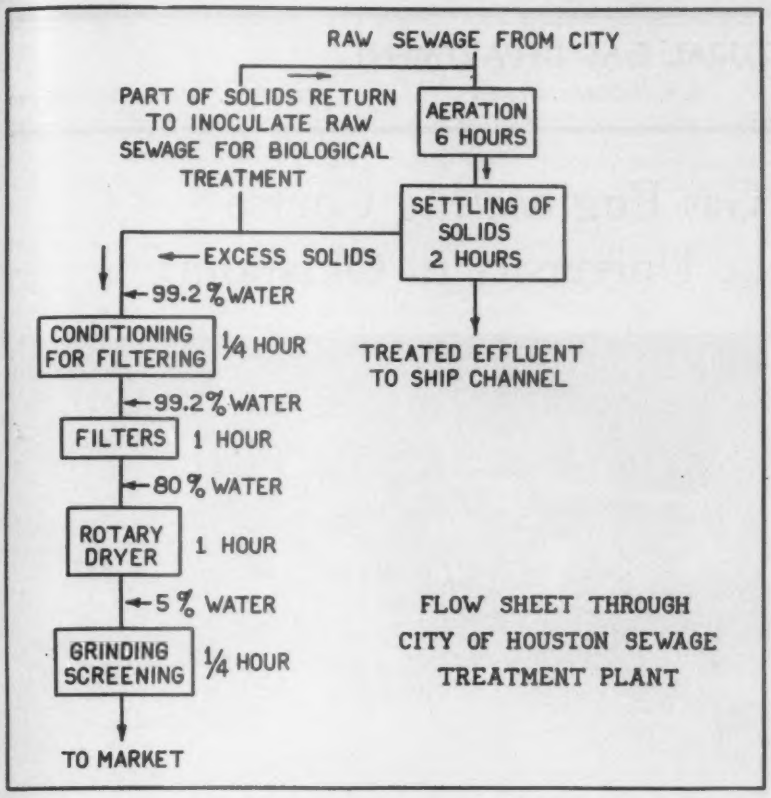
The excess solids or sludge is pumped through an 8 in. line to the conditioning tank which is part of the equipment of the new plant, and chemicals are then forced into it. These chemicals consist of copperas and chlorine gas which are mixed in a separate tank by a motor driven propeller, the copperas being delivered by elevator and the gas through a pipe. The chlorinated sludge is then dewatered in a battery of four large disc filters to a moisture content of 80 per cent. The discs are divided into sectors which are covered with canvas and these are under vacuum while submerged in the sludge in the filters and this vacuum is continued part of the time while they are revolving in the air. However, as they approach the discharge the vacuum is changed to compression to loosen up the dry cake. Two large pumps are employed.

Conveyors transfer the filter cake, as it drops from the filters, to storage bins and from there it is moved by screw conveyor to the dryers. There are two dryers and they are very similar to those used in burning clinkers in cement mills in that each consists of a horizontal, rotating steel cylinder with a brick furnace at the charging end. These dryers or kilns are 60 ft. long and one is 5 ft. in diameter and the other 6 ft. Each furnace is 25 ft. long and 10½ ft. wide and is divided into combustion chamber and heating chamber. The latter is built high enough so that about 18½ ft. of the kiln is surrounded by it and a space 6 ft. high is left between the bottom and the bottom of the kiln. This portion of the heating chamber is baffled so as to obtain an even distribution of the heat over the entire surface of the kiln.

The combustion chamber projects 6½ ft. beyond the heating chamber and is 7½ ft.



The Two Rotary Type Gas-Fired Dryers



Flow Sheet of Sewage Treatment Plant

high but is so set that the top is at least 2 ft. below the bottom of the kiln so as not to interfere with the operation of charging which is continuous. The combustion chamber is fired with a single gas burner 18 in. in diameter and the hot products of combustion pass into the heating chamber through a 2 ft. opening between.

The filter cake entering the dryers contains 80 per cent water and after being subjected to a temperature of around 1,600° F. for an hour, it is discharged with only 5 per cent moisture remaining. It requires 18,000 cu.ft. of natural gas per ton of material treated. As the material is more or less inflammable, direct firing, that is, with the flame shooting directly into the kiln proper, cannot be employed. The kilns or dryers are set close together and parallel and a single stack, located between them serves as a relief stack only for both. They are operated, under induced draft, from variable speed blowers, motor driven. The kilns are rotated by motor and set at a slight angle to aid the movement of the material from charging to discharge end. Temperature control is aided by the use of recording pyrometers.

The dried sludge is discharged onto a travelling belt conveyor, where a magnet removes any tramp iron, and is delivered to an electric screen. The material not passing through is returned by conveyor to the charging end of the kiln and mixed with the filter cake to be dried. That which does pass the screen is transferred to two other screens, the first removing the dust and the second screening out the finished product or fertilizer. This material is ground and again passed over the last two screens; then it is weighed with automatic scales and put into storage bins or loaded through a spout into a railroad car.

Prior to the erection of this plant the city was forced to buy land for lagoons and sand beds where it frequently required as long as a third of a year to obtain complete disposal. Cleaning the sand beds and hauling the product 8 or 10 miles to a market, providing there was a market, was also expensive. Experience has shown that the cost of treating sewage for fertilizer is no greater than the cost of placing it on the sand beds. Furthermore, the investment and sinking fund for the fertilizer plant is no larger than the cost of land, etc., incident to the former disposal program. Normally, this fertilizer is sold in bulk for from $15 to $20 per ton, under the trade name of Hu-Actinite.

In addition to the plant just described the city of Houston has six small disposal plants in different locations. Plans have been drawn up for the erection of another disposal plant together with a gas-fired fertilizer plant, to take the place of these six small plants which still dispose of their solids by means of sand beds.

McCarter Medals Awarded

TWO employees of The Philadelphia Gas Works Company, Philadelphia, Pa., at the company's monthly inter-departmental meeting last month received Thomas N. McCarter awards for saving lives by resuscitation. The presentation was made by Walton Forstall, vice-president in charge of distribution, at the company's offices.

Harry Bowen, an orderman, was awarded the McCarter Bar and Certificate, and Thomas Garvey, employed in the Street division, received the McCarter Medal and Certificate.

Harry Bowen

Mr. Bowen entered a house and worked for twenty minutes to revive a man who had been overcome by gas. The victim was then taken to a hospital where he recovered. This is the second time that Bowen has won a McCarter award, as he was cited for a similar act performed in May, 1931.

Thomas Garvey

Garvey revived a fellow employee who had been overcome by gas from a six-inch main last October.

In making the awards, Mr. Forstall emphasized the fact that employees of The Philadelphia Gas Works Company have been thoroughly trained in the prone pressure method of resuscitation and are competent to apply it in cases of emergency.

Leslie E. Stahler, supervisor, Joliet District, Western United Gas and Electric Company, Aurora, Illinois, also has had his name added to the roll of those who have received McCarter Medals. Through application of the prone pressure method of resuscitation, Mr. Stahler saved the life of an adjuster who had been overcome by gas. The presentation to Mr. Stahler was made by J. F. Eglof, vice-president of the company at a meeting of company employees.

L. E. Stahler

NATURAL GAS DEPARTMENT

GEORGE W. RATCLIFFE, Chairman A. E. HIGGINS, Secretary FRANK L. CHASE, Vice-Chairman

Natural Gas Engineering Course Offered at the University of Oklahoma

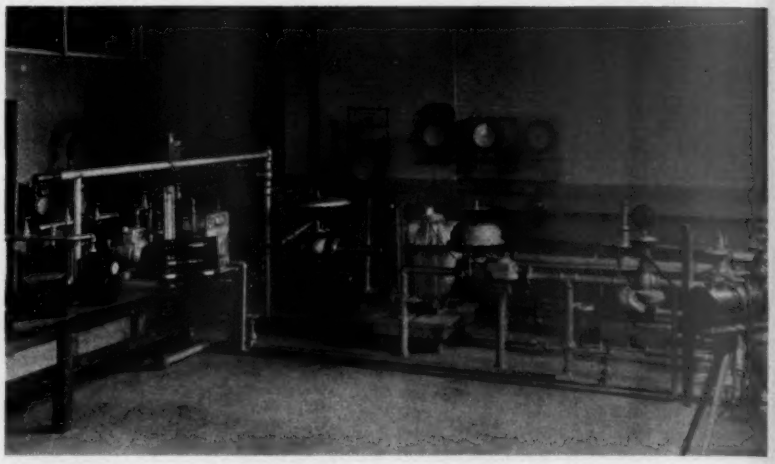
AN announcement of major interest and importance to the natural gas industry comes from the University of Oklahoma at Norman, Oklahoma. Effective with the beginning of the present semester of the college year, February 1, Oklahoma University offered a course in natural gas engineering leading to the degree of natural gas engineer. It is believed that this is the first course leading to this degree offered by any university in the United States. The course will be under the direction of Professor W. H. Carson, known to many in the industry through the active part he has taken in the Southwestern Gas Measurement Short Course.

It is expected that the course will prove a popular one as the tremendous expansion of the natural gas industry during the past five years has demonstrated to natural gas company executives, whether of production, transportation or operating companies, the crying need for adequately trained natural gas engineers. Heretofore positions of highest responsibility in all branches of the natural gas industry have had to be filled by men of practical rather than adequate college training, or, if with the latter, men with degrees in civil, mechanical, or electrical engineering, who proved themselves capable of adapting their training and qualifications to the needs of the natural gas operating field.

That many of these men have proven equal to the gigantic problems with which they have found themselves confronted is conceded by all persons informed on the subject, but the need for men with specific training for a natural gas career is realized by no one more than by the men who have made good in the natural gas field up to the present time.

Oklahoma University, surrounded as it is by several of the world's greatest natural gas producing areas and in immediate proximity to natural gas operation of every character on a large scale, and equipped mechanically as well as geographically to afford the best of advantages to men wishing to avail themselves of what the new course offers, is ideally situated for this important forward step in technical education.

W. B. Bizzell, president, and J. H. Felgar, dean of engineering of Oklahoma University, have long manifested eagerness to establish and maintain for their institution leadership in offering maximum facilities and opportunities to young men wishing to qualify for responsibilities in development of the wonderful natural resources of the Mid-Continent and Southwestern area. This has been evidenced in recent years in connection with the Southwestern Gas Measurement Short Course, held each year since 1924 until this year, which has attracted gas measurement men from all natural gas regions in this country and many from beyond its borders.



View of a Portion of the Natural Gas Engineering Laboratory at the University of Oklahoma

The new course in natural gas engineering at the Oklahoma University consists of the regular engineering curriculum for the first year, the mechanical engineering curriculum for the second year, and the following for the third and fourth years:

Third Year

First Semester

Courses			Hours
M.E.	151	Gen. Thermodynamics	4
M.E.	161	Steam Laboratory	2
Mech.	151	Applied Mechanics	5
Mechs.	152	Graphics	1
C.E.	3	Elm. Surveying	3
E.E.	155	Elec. Cts. and Mach.	3
E.E.	156	Elec. Lab.	2
Total			20

Second Semester

Courses			Hours
M.E.	372	Gas Lift	1
M.E.	154	Power Plant Engr.	4
M.E.	162	Steam Lab. (Con.)	2
M.E.	170	M.E. Conf. (Con.)	1
Mechs.	153	Str. of Meter	5
Mechs.	154	Test Meter	1
Acct.	155	Elem. Accounting	3
P.E.	201	Drilling & Dev.	3
Total			20

Fourth Year

Courses			Hours
M.E.	256	Oil Testing	1
M.E.	283	Refrigeration	3
M.E.	265	Int. Comb. Engines	3
M.E.	266	Int. Comb. Eng. Lab.	1
M.E.	373	Gas & Oil Tr. & Meas.	4
Mechs.	256	Mach. Design	3
Engr.	101	Contracts	3
English	119,	Adv. Comp.	2
Total			20

M.E.	171	M.E. Conf. (Con.)	1
M.E.	257	Power Plant Design	3
M.E.	264	Heating & Vent.	3
M.E.	268	M.E. Problems	3
Mechs.	255	Hydraulics	4
Engr.	303	Indust. Manag.	2
P.E.	203	Nat. Gaso. & Ref.	2
M.E.	374	Storage & Tr. of Oils	2
Total			20

Wrinkle Contest Enjoys Widespread Popularity

MANY of the safeguards and the conveniences now enjoyed by the industry have had their inception in the Wrinkle Contest, sponsored by the Natural Gas Department of the American Gas Association. It has always been an interesting movement and one which has held the interest and keenest effort of those in the industry.

This year's contest was unusually productive of usable and efficient short cuts and inventions. At no time since this contest started have there been so many entrants. The judges' problem proved to be one of real difficulty and it was only after a great deal of review and effort that prizes were finally awarded to the winners. Because of this unusual interest and general response from the industry, it has been decided to continue this contest during 1933 and it is hoped that the same high rate of interest will be maintained and that the contest this year will be even more efficient and productive of new ideas than the one just closed.

A list of the winners in each division follows:

Distribution:

FIRST PRIZE

Wrinkle No. 1—H. D. Mahaffey, Ohio Fuel Gas Co., Mount Vernon, Ohio.

SECOND PRIZE

Wrinkle No. 38—W. Musgrave Wood, Kansas City Gas Co., Kansas City, Mo.

THIRD PRIZE

Wrinkle No. 16—Joe Zimmerman, San Antonio Public Service Co., San Antonio, Texas.

Transportation:

FIRST PRIZE

Wrinkle No. 68—Luther Tolbert, Lone Star Gas Co., Dallas, Texas.

SECOND PRIZE

Wrinkle No. 56—T. J. V. How, General Petroleum Corporation of California, Los Angeles, Cal.

THIRD PRIZE

Wrinkle No. 65—J. L. Hamilton, Panhandle Eastern Pipe Line Co., Arlington, Kansas.

Production:

FIRST PRIZE

Wrinkle No. 61—W. A. Hovis, United Natural Gas Co., Oil City, Pa.

SECOND PRIZE

Wrinkle No. 52—Joe Moore, Lone Star Gas Company, Ranger, Texas.

THIRD PRIZE

Wrinkle No. 6—H. D. Mahaffey, The Ohio Fuel Gas Co., Mount Vernon, Ohio.

Office:

FIRST PRIZE

Wrinkle No. 17—G. W. Harr, Monongahela-West Penn. Public Service Co., Fairmount, W. Va.

SECOND PRIZE

Wrinkle No. 19—W. L. Cressman, Ohio Fuel Gas Co., Columbus, Ohio.

THIRD PRIZE

Wrinkle No. 51—R. O. Cox, Lone Star Gas Co., Dallas, Texas.

Safety:

FIRST PRIZE

Wrinkle No. 20—James Arthurs, Mount Oliver, Pittsburgh, Pa.

SECOND PRIZE

Wrinkle No. 25—Lester L. Hesson, Ohio Fuel Gas Co., Columbus, Ohio.

THIRD PRIZE

Wrinkle No. 41—Frank Grant, Central Kentucky Natural Gas Co., Lexington, Ky.

As Others See Us

Unified Control

* * * the trade slump may not be without its advantages, for it has done more to bring home to the gas industry the need for directing greater attention to sales matters than anything which could have happened in a period of unalloyed success. It has taught us that, valuable as are the big industrial loads, they cannot replace the diverse domestic and commercial loads. The former are subject to more violent fluctuations than the latter and many gas undertakings have learned in recent years that their security in bad times depends upon the full development of domestic and commercial possibilities. Our competitors, too, have learned that lesson and are likely to put up a keen fight to secure a larger share of the more secure business.

Thus we are once again prompted to ask if the gas industry would not be wise to close its ranks and get to grips with the many problems which, according to the measure of success attending their solution, will influence the whole future course of the industry. Production is in a sound position and our main concern must be for the improvement of salesmanship and service. Whilst the past year or two has witnessed a great change in the attitude of the industry towards those two important factors, there is reason to believe that progress will be retarded unless the central organization is tightened up. With the best will in the world it is impossible for several organizations to function as efficiently as a single controlling body. The American Gas Association is before us as an example of the power which accrues to a single organization representing all sections of the industry. We may add that the British electrical industry is beginning to realize that its many sectional organizations are a source of weakness and with that realization may come a change of policy. Already a joint congress is projected for this year and this may well prove to be the first move towards unified control.—Abstract from "Current Topics," *The Gas World*—January 21, 1933.

The Satisfied Consumer

IT should now be realized by even the most ardent gas makers that the foundation on which the industry is built is the satisfied consumer. By satisfied we do not mean the consumer who does not complain. Complaints are not a safe criterion on which to judge the satisfaction of consumers. Very few consumers have complained of their gas lighting and yet quite a number of them have gone to the expense and trouble of having a competing light installed, from which it follows that for reasons good or bad they were dissatisfied. In our view we must consider that every consumer is dissatisfied unless we are giving him the best service that the brain of the industry can devise. It is our contention that the gas industry is not conducting its business on that basis. The larger undertakings are in a class by themselves, and it is not sufficient that others should attempt to bask in the reflected glory from the big concerns with their research staffs.

Taking the industry as a whole, it can scarcely be denied that the lack of facilities for testing and approving of appliances is a source of weakness. Every section of the industry views any proposal for a central laboratory with suspicion. Not that any of them doubt its value; but some wonder what the other fellow will think about it and others are in the fortunate position of not needing its services. Thus, well over a thousand gas undertakings continue to buy by guess and carry out their experiments on the consumer. Gas Utilization research seems to be so remote that we would not mention it were it not that it is so vital to the future of gas. Compare what we are doing with the work that has been undertaken by the American Gas Association. We have not even got to the point of considering the elimination of burner regulators; America passed that point years ago and has since delved into every detail of burner design. Its most recent research, details of which have been published, concerns noise abatement in industrial burners. Why should not a British Gas Association be playing its part in this and kindred research?—Abstract from "Current Topics," *The Gas World*—January 21, 1933.

TECHNICAL SECTION

J. A. PERRY, Chairman H. W. HARTMAN, Secretary O. S. HAGERMAN, Vice-Chairman

Natural Gas and Manufactured Gas Distribution Engineers To Meet in Pittsburgh, April 3-4

Geo. W. Ratcliffe

AS announced in the February issue of THE MONTHLY, the Distribution Committee selected Pittsburgh, Pa., as the location of the 1933 Distribution Conference, with a view of making the conference available for the attendance of natural gas distribution engineers as well as manufactured gas engineers. The conference will be held at the William Penn Hotel on April 3 and 4 and the committee is at present endeavoring to balance its program to be of equal interest to the engineers in both major branches of the industry.

C. A. Harrison

Pittsburgh as the center of a natural gas area and representing the headquarters of a number of prominent natural gas companies, including the Equitable Gas Co., the United Natural Gas Co., the Carnegie Natural Gas Co. and the Manufacturers Light and Heat Co., makes an ideal location for the joint consideration of distribution problems common to both the manufactured and natural industries. A committee representing the local companies is working actively to secure a full representation of distribution engineers of the Natural Gas Department and also have been most cooperative in furnishing the Distribution Program Committee with subjects and authors particularly qualified to talk on matters of interest to the natural gas engineers.

The reports of the various subcommittees scheduled for the conference will cover subjects which in themselves may be said to be equally important to both branches of the industry. Erick Larson, chairman of the Pipe Joints Committee will include in his report the latest developments in the weld test meter being developed at the Laboratory. Under the sponsorship of his committee, it is hoped to have a report from the A. G. A. Laboratory which will contain the results of more than two years' research in mechanical pipe joints. The report will also include the latest findings of the Laboratory in connection with gasket materials. The increasing interest of operating engineers in the value of mechanical pipe joints for higher pressures should make this report of an extreme interest both to the natural and manufactured interests.

The report and presentations under the sponsorship of the Committee on Pipe Coatings and Corrosion will include a critical analysis of the latest findings of our Research Associate, Dr. Scott Ewing on the various types of pipe coating. Dr. Ewing will present a paper on "The Progressive Deteriorating of Pipe Coating." Dr. Gordon Scott, Research Associate of the American Petroleum Institute, will submit a paper on the "Method of Determining Condition of a Pipe Coating." In addition, it is hoped to have presented a paper on "Latest Developments in Use of Back Voltages in Electrolysis Prevention," which was originally presented by Mr. Schneider, of the Pacific Gas and Electric Company before the meeting of the Pacific Coast Gas Association.

A paper on the "Occurrence of Gum Formations in Distribution System" has been arranged for as well as a paper on "Trends in Design of Regulators and Regulation of Pressure." Both of these subjects it is felt will be of equal interest to the natural and manufactured gas engineers.

Through the courtesy of Geo. W. Ratcliffe, chairman of the Natural Gas Department, F. F. Schauer, of the Equitable Gas Co., S. W. Meals, of the Carnegie Natural Gas Co., and J. B. Tonkin, of the Peoples Natural Gas Co., arrangements have been made for the presentation of a paper entitled "Safeguarding the Public and Property from the Hazards of Gas Leakage" which will outline the procedure followed in connection therewith by the Pittsburgh Utilities survey which is directly under the supervision of Dr. J. B. Garner, of the Mellon Institute. The committee is also indebted to these gentlemen for a paper on the subject of "Distribution of Gas Through the Medium of High Pressure Plant," to be presented by T. H. Kerr, of the Columbia Engineering and Management Corporation, Columbus, Ohio.

As usual, it is anticipated that the open forum provided on the program will prove to be a most interesting feature of the conference. These open forums are provided for the purpose of furnishing an opportunity for attending delegates to bring up problems of peculiar interest to them in their own work and which may not be covered in the set program of the conference. It is hoped that the natural gas engineers attending will take full advantage of the opportunity of bringing up their problems, as this will be most educational in acquainting the manufactured gas engineer with such problems.

Headquarters has arranged to secure reduced fare privileges for delegates attending the conference. The William Penn Hotel has guaranteed an ample supply of rooms for the delegates at the minimum rate of $3 per day. The conference has been limited to two days, with a morning and afternoon session on each day. Pittsburgh is centrally located and it is felt that the arrangements consummated will enable engineers to avail themselves of the value of the conference at a minimum expenditure per delegate of both time and money. A definite notice will be mailed from headquarters to company members, both manufactured and natural gas, on March 4. This notice will contain full details with regard to the conference, reduced fare certificates and printed program. While all arrangements for presentations have not yet been definitely settled, it is felt that the following tentative program will be informative:

MONDAY

April 3—10:00 A.M

Opening Remarks—C. A. Harrison, Chairman, Distribution Committee.

Welcome to Pittsburgh. (Speaker to be selected.)

Report: Pipe Coatings and Corrosion Committee. Geo. H. Boyd, Chairman.

Paper: The Progressive Deteriorating of Pipe Coating. Dr. Scott Ewing, Research Associate.

Paper: A Method of Determining Condition of a Pipe Coating. Dr. Gordon Scott.

Paper: Abstract Summary of Report on Inspection and Tests of Specimens Removed in 1932. J. K. Crowell.

2:00 P.M.

Paper: Latest Developments in Use of Back Voltages in Electrolysis Prevention (Pacific Coast Gas Association).

Report: Unaccounted-for Gas Committee. J. M. Pickford, Chairman.

(Continued on page 114)

New Mechanical Gas Main "Stopper" Developed

A NEW and improved gas main "stopper" which operates mechanically is now being used by the Consolidated Gas Company of New York. It was designed by H. L. Peden, superintendent of mains. "Stoppers" to fit various sized gas mains have been built by Mr. Peden, and have proved satisfactory in service.

The new "stopper" has the same flexible frame, padding, covering, and diaphragm used on "stoppers" of the conventional type. The handles have been discarded,

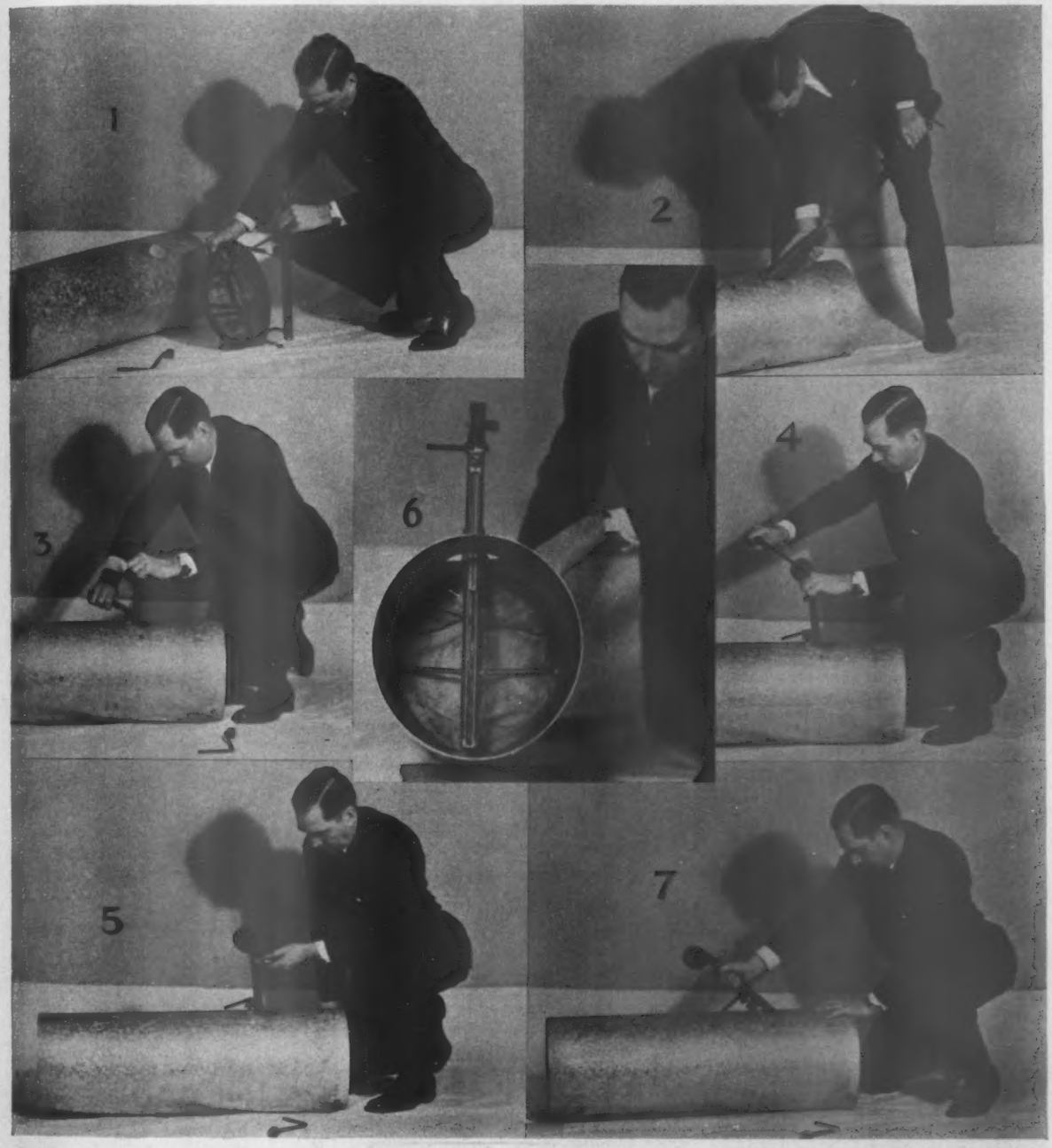


FIGURE 1—H. L. PEDEN DEMONSTRATES THE GAS MAIN "STOPPER" HE HAS DEVELOPED

FIGURE 2—INSERTING THE "STOPPER" IN THE MAIN

FIGURE 3—ATTACHING THE SUPPORTING TUBE FIRMLY TO THE MAIN

FIGURE 4—WINDING THE REEL TO BRING THE "STOPPER" INTO PLACE IN THE MAIN

FIGURE 5—LOCKING THE "STOPPER" IN PLACE

FIGURE 6—VIEW SHOWING THE NEW "STOPPER" IN THE MAIN. THERE IS FORCED CONTACT AT FOUR POINTS

FIGURE 7—REMOVING THE "STOPPER"

however, and in their place is an arrangement which permits of mechanical operation. The old type of "stopper" required considerable experience and skill on the part of the workmen, but the new device can be operated easily by an inexperienced man.

The construction of the new "stopper" is evident in the accompanying illustrations.

The method of operation is as follows:

The "stopper" (shown in Figure 1) is inserted in the gas main through a tap hole in the usual manner. (See Figure 2.) The supporting tube follows into the hole, and is then clamped to the top wall of the pipe by lugs and made rigid and firm. (The tightening operation is shown in Figure 3.)

A reel is then wound (Figure 4) and the metal cable causes the "stopper" to move upward and forward, the top part sliding along the surface of the upper part of the pipe. At the same time, the "stopper" is expanding into circular shape to fit snugly against the pipe wall. The tension of the cable presses the two arms against the wall of the pipe.

After the "stopper" is properly placed, it is locked to prevent it from working loose or slipping. (See Figure 5.) Figure 6 shows the "stopper" locked in the main, with forced contact at four places.

To remove the "stopper," it is first unlocked, and then the supporting arm is pushed forward. (Figure 7.)

Many advantages are claimed for the new "stopper." First, the diaphragm is always at right angles to the axis of the pipe. The "stopper" moves along the top of the main, instead of the bottom, and does not scrape up the foreign matter which may be found in the bottom of the pipe. The positive lock arrangement prevents the "stopper" from blowing out or becoming loosened when in use. It can also be used in mains carrying higher pressures than the "stoppers" previously made. The bracing against the wall of the main, giving forced contact of four instead of two places, and the fact that it can be removed easily, are also listed as advantages of the "stopper" developed by Mr. Peden.

Special Promotional Rate for "Tell Them about Cooking-with-Gas" Campaign

THE new Program of Action, "Tell Them about Cooking-with-Gas," is under way. This is the movement sponsored by the National Directing Committee of Executives as its initial step in the sales development campaign, which this Committee is directing for the industry.

The aim of the program is to mobilize the company personnel of the gas industry in a united campaign to interest every housewife in the United States and Canada in the merits of modern gas cooking and modern gas ranges—to wage a vigorous battle with all the forces at command not only to maintain, but to increase, the domestic cooking load.

The program provides effective weapons and training for the gas employee army. It also includes thoroughly prepared plans which will help company executives organize local campaigns and direct them to a successful conclusion.

Enrollments have already come in from more than seventy-five companies. The complete success of this undertaking, however, is directly and definitely dependent upon united mass action. This calls for active enthusiastic participation by every member company and full mobilization by each of its gas employees, ranging from 50 per cent to 75 per cent of the company's personnel roster.

In order to encourage immediate participation by every company to the fullest possible extent, the Association has just negotiated a new arrangement under which it is now able to offer a *special promotional rate* to all those companies which enroll a large part of their personnel promptly.

The fee for the A.G.A. Program of Action was originally fixed at the low rate of only $5 per enrollment. For member companies which enroll for the campaign *on or before April 1, 1933*, however, the following special reductions in the fee will be made:

1. For an enrollment of less than one-fourth of its total gas employee personnel, the fee will remain at the original base rate of $5 per enrollment.
2. For an enrollment equal to or exceeding one-quarter (¼) of its total gas employee personnel, the fee will be $4 per enrollment.
3. For an enrollment equal to or exceeding one-third (⅓) of its total gas employee personnel, the fee will be $3.50 per enrollment.
4. For an enrollment equal to or exceeding one-half (½) of its total gas employee personnel, the fee will be $3 per enrollment.

The revised charges under this special promotional rate will, of course, be retroactive for those companies which have already sent in their enrollments or which may increase their participation before April 1, 1933, to any of the classifications as outlined above.

In a very recent letter sent to executives of member companies, Mr. Conrad N. Lauer, Chairman of the National Directing Committee of Executives, wrote:

> "Since the course has been announced I have had the opportunity of ascertaining the value of this activity for the training of the employees of my own company and you may be interested in knowing what we have done in this connection. As a result of study of the activity by our Sales, Service, and Commercial Departments, we are now forming classes for the training of employees in these divisions, utilizing this course for the training of approximately 900 employees, constituting somewhat more than one-third of our total personnel.
>
> "If you have not already arranged for participation of your company employees in this activity, I again urge your consideration of it, not only as a sales promotional measure, but also in order that your company may carry through effectively on the full program of the National Directing Committee of Executives which will be presented at a later date."

The first material for the new program is off the press and it contains important information which every gas company employee ought to know and which every housewife ought to know. This first Unit simply and vividly presents our story that "Cooking-with-Gas Is Efficient," and shows our employees how to tell that story interestingly and convincingly to present customers—to personal friends and acquaintances.

The training feature of the program is issued in three sections or Units with leaders' manuals for holding group meetings of employees. Unit II, "Cooking-with-Gas Is Modern," and Unit III, "Cooking-with-Gas Is Economical," will follow at intervals approximately a month apart.

The special Executive Guide, which is supplied only to company executives, outlines fully developed procedures for organizing and directing employees' efforts in carrying through a successful local campaign.

The many reports now coming in daily to Association headquarters clearly indicate that this important campaign is receiving strong and widespread support and it is hoped that by the middle of April a national concerted forward movement with every company in mass action will be well under way.

A. G. A. Proceedings Wanted

UNIVERSITY library desires to purchase copies of 1920 and 1922 Proceedings Technical Section A.G.A. State price postpaid and condition. Address Secretary, American Gas Association, 420 Lexington Avenue, New York, N. Y.

Public Service Papers Merge

H. J. GONDEN, publisher, has announced that, effective March 1, *Public Service Management* and *Public Service Magazine*, which have been published in Chicago since 1906, will be merged under the title of *Public Service Magazine*.

Monthly Summary of Gas Company Statistics

FOR MONTH OF DECEMBER, 1932

Issued February, 1933, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Statistician

COMPARATIVE STATISTICS OF 203 MANUFACTURED GAS COMPANIES FOR THE MONTH OF DECEMBER, 1932

	Month of December			Twelve Months Ending December 31		
	1932	1931	Per cent Increase	1932	1931	Per cent Increase
Customers						
Domestic	8,550,566	8,917,720	— 4.1			
House Heating	55,077	51,678	6.6			
Industrial and Commercial	400,409	402,162	— 0.4			
Miscellaneous	8,113	7,221	—	*See December*		
Total	9,014,165	9,378,781	— 3.9			
Gas Sales (MCF)						
Domestic	20,485,942	21,815,100	— 6.1	252,557,545	261,662,249	— 3.5
House Heating	2,882,552	2,296,050	25.5	19,305,920	17,754,031	8.7
Industrial and Commercial	5,953,848	6,609,380	— 9.9	71,869,764	81,547,255	—11.9
Miscellaneous	215,032	219,364	—	2,127,044	2,178,854	—
Total	29,537,374	30,939,894	— 4.5	345,860,273	363,142,389	— 4.8
Revenue (Dollars)						
Domestic	23,480,359	25,132,630	— 6.6	292,992,469	305,056,147	— 4.0
House Heating	1,880,906	1,693,471	11.1	13,641,259	13,729,072	— 0.6
Industrial and Commercial	5,143,369	5,722,291	—10.1	62,261,596	70,805,070	—12.1
Miscellaneous	148,977	150,415	—	1,488,945	1,662,826	—
Total	30,653,611	32,698,807	— 6.3	370,384,269	391,253,115	— 5.3
Gas Produced and Purchased (MCF)						
Gas Produced						
(a) Water Gas	14,539,079	14,904,075	— 2.4	158,322,359	177,326,681	—10.7
(b) Retort Coal Gas	2,263,554	2,733,304	—17.2	27,307,410	32,547,892	—16.1
(c) Oil Gas	481,985	898,995	—46.4	6,899,735	7,766,562	—11.2
(d) Coke Oven Gas	4,236,437	4,479,180	— 5.4	47,947,853	53,474,739	—10.3
(e) Reformed Oil Still Gas	409,711	420,354	— 2.5	4,704,745	4,478,490	5.1
(f) Total Gas Produced	21,930,766	23,435,908	— 6.4	245,182,102	275,594,364	—11.0
Gas Purchased						
(a) Coke Oven Gas	8,189,506	8,801,020	— 6.9	90,913,223	105,840,572	—14.1
(b) Oil Still and Natural Gas	5,061,845	3,051,705	—	46,741,066	10,573,439	—
(c) Total Gas Purchased	13,251,351	11,852,725	11.8	137,654,289	116,414,011	18.2
Total Gas Produced and Purchased	35,182,117	35,288,633	— 0.3	382,836,391	392,008,375	— 2.3

COMPARATIVE STATISTICS OF 206 NATURAL GAS COMPANIES FOR THE MONTH OF DECEMBER, 1932

Customers						
Domestic (Including House Heating)	4,501,369	4,575,943	— 1.6			
Commercial	241,155	238,151	1.3			
Industrial	17,828	17,732	0.5			
Main Line Industrial	5,243	5,649	— 7.2	*See December*		
Miscellaneous	1,668	1,943	—			
Total	4,767,263	4,839,418	— 1.5			
Gas Sales (MCF)						
Domestic (Including House Heating)	32,568,061	31,397,013	3.7	271,514,073	284,197,364	— 4.5
Commercial	5,836,182	5,107,564	14.3	43,539,236	42,713,591	1.9
Industrial	15,254,141	15,161,955	0.6	175,889,576	191,960,319	— 8.4
Main Line Industrial	14,374,849	14,974,361	— 4.0	145,472,828	177,576,507	—18.1
Miscellaneous	823,796	906,560	—	6,984,392	7,309,346	—
Total	68,857,029	67,547,453	1.9	643,400,105	703,757,127	— 8.6
Revenue (Dollars)						
Domestic (Including House Heating)	21,051,433	21,231,948	— 0.9	189,110,004	198,049,448	— 4.5
Commercial	2,574,203	2,326,042	10.7	21,233,700	21,392,830	— 0.7
Industrial	3,232,588	3,424,808	— 5.6	37,016,431	44,364,427	—16.6
Main Line Industrial	1,686,467	1,883,559	—10.5	17,356,216	22,638,523	—23.3
Miscellaneous	119,301	93,112	—	1,088,460	981,367	—
Total	28,663,992	28,959,469	— 1.0	265,804,811	287,426,595	— 7.5

Gas Utility Revenues Down 6 Per Cent in 1932

REVENUES of manufactured and natural gas utilities aggregated $636,189,080 during 1932, as compared with $678,679,710 during the preceding year, a decline of six per cent, according to reports from companies representing more than 90 per cent of the utility distribution of manufactured and natural gas.

The manufactured gas companies reported revenues of $370,384,269 for the year, a drop of 5.3 per cent from a year ago, while revenues of the natural gas concerns totaled $265,804,811 or 7.5 per cent less than for the year 1931.

Sales of manufactured gas reported for 1932 totaled 345,860,273,000 cubic feet, a decline of 4.8 per cent, while natural gas sales for the year were 643,400,105,000 cubic feet, a drop of 8.6 per cent.

For comparison with other fuels, the production of bituminous coal during 1932 declined 20 per cent from the preceding year, anthracite coal production dropped 17 per cent, crude petroleum output was down 8 per cent, coke production down 35 per cent, while the production of electric power declined 10 per cent.

These economic adjustments characterizing most of the basic fuel industries were reflected in the production policies of the manufactured gas companies during 1932. The declining trend in the production of water gas continued, output averaging almost 11 per cent under the previous year. While the quantities of coke oven gas produced in plants owned by gas utilities decreased by 10 per cent the volume of coke oven gas purchased from sources outside the industry, such as merchant coke and steel companies declined over 14 per cent.

Obituary

Oscar C. Tow

OSCAR C. TOW, for many years a research engineer at the American Gas Association Testing Laboratory, Cleveland, Ohio, died suddenly January 25.

Mr. Tow was a graduate of Iowa State College and entered the employ of the Laboratory in 1926. He was employed in various capacities as testing and research engineer until February, 1927, when he was assigned to the Research Department to assist in carrying out the investigation on mixed gases.

Following the completion of the Mixed Gas Research investigation, in 1932, he engaged in research on various problems relating to the preparation and revision of requirements. At the time of his death he had practically completed an exhaustive survey of the types of gas distributed throughout the entire United States, and had completed a series of tests to supplement this survey, the purpose of the entire study being to serve as a basis for definite recommendations to the A.S.A. Sectional Committee, Project Z-21, A.G.A. Approval Requirements Committee, concerning the number and kinds of gases to be used for approval tests on gas appliances.

Funeral services and burial to take place in Le Grande, Iowa.

Mr. Tow leaves his father and two brothers.

Mrs. Charles A. Munroe

MRS. RHEA LOGAN MUNROE, wife of Charles A. Munroe, president of the Northern Utilities Company, died of pneumonia February 21 at her home in Chicago.

Eugene P. Lynch

EUGENE P. LYNCH, superintendent of distribution, The Laclede Gas Light Company, St. Louis, Mo., died Wednesday, February 8, at St. Mary's Hospital, at Rochester, Minn., following an operation. He was forty-seven years old, had been with the Laclede for twenty-seven years and for nine years was superintendent. It was under his direction that the changeover from manufactured to a mixture of natural and manufactured gas was made in St. Louis, which required the adjustment of approximately 2,000,000 appliances. During the changeover Mr. Lynch had under his supervision approximately 800 men and the job was completed in slightly less than three months with no inconvenience or trouble to the customers.

Mr. Lynch was a member of the Elks Lodge and of the Engineers Club. He is survived by his widow, Mrs. Kathryn Lynch, and two children, Jack, nine, and Patsy, two. He also is survived by his mother, three sisters, and two brothers. Funeral services were held in St. Louis, February 11, and burial was in St. Louis.

Natural Gas Meet Next September

The annual convention of the Natural Gas Department of the American Gas Association will be held in Chicago the week of September 25.

The department determined not to hold a spring convention this year, but to enlarge and expand upon its meeting as a part of the International Gas Conference and the Fifteenth Annual Convention of the American Gas Association.

Laboratory Supervisors Exchange Posts

IN the interest of securing greater coordination of activities of the A.G.A. Laboratory in Cleveland and its Los Angeles Branch, it has been decided to exchange some of the personnel of these two Laboratories.

The men affected are Dr. F. E. Vandaveer and W. M. Couzens. The former, who is Laboratory Supervisor and in charge of the Research Department of the American Gas Association's Testing Laboratory in Cleveland, Ohio, left Cleveland February 11 to take charge of the operations of the Pacific Coast Branch. W. M. Couzens, Supervisor of the Pacific Coast Branch, who has successfully administered the affairs of the Los Angeles unit, since its establishment in 1930, has been transferred to Cleveland and will take over the Research Department at the main Laboratory.

It is believed that this exchange of personnel will do a great deal to correlate further the testing policies being followed at the two Laboratories.

Mr. Eibell Leaves Worthington

F. C. Eibell, for the past four years manager of the advertising and publicity department of the Worthington Pump and Machinery Corporation, New York, N. Y., has resigned.

Natural Gas and Manufactured Gas Distribution Engineers To Meet in Pittsburgh

(Continued from page 110)

Paper: Safeguarding the Public and Property from the Hazards of Gas Leakage. Dr. J. B. Garner, Mellon Institute, Pittsburgh, Pa.

Report: Meters Committee. C. H. Stevick, Chairman.

Paper: Measurement of Large Volumes of Gas. (Author to be selected.)

TUESDAY

April 4—9:30 A.M.

Report: Cast Iron Pipe Standards Committee. C. C. Simpson, Chairman.

Paper: The Distribution System and the Gum Problem. (Author to be selected.)

Report: Committee on Pipe Joints. Erick Larson, Chairman.

Report of Research on Mechanical Pipe Joints. R. M. Conner, Director, A.G.A. Laboratory.

Progress and Development of Weld Test Meter. Erick Larson.

2:00 P.M.

Paper: Trends in Design of Regulators and Regulation of Pressure.

Paper: Distribution of Gas Through the Medium of High Pressure Plant. T. H. Kerr.

OPEN FORUM

Associations Affiliated with A. G. A.

Canadian Gas Association
Pres.—Hugh McNair, Winnipeg Electric Co., Winnipeg, Man.
Sec.-Tr.—G. W. Allen, 21 Astley Avenue, Toronto.

Empire State Gas and Electric Association
Pres.—Alfred H. Schoellkopf, Niagara Hudson Power Corp., Buffalo, N. Y.
Chairman, Gas Section—A. M. Beebee, Rochester Gas & Electric Corp., Rochester, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.

Illinois Public Utilities Association
Pres.—Bernard J. Mullaney, The Peoples Gas Light & Coke Company, Chicago, Ill.
Sec.—J. R. Blackhall, Suite 1213, 79 West Monroe St., Chicago, Ill.

Indiana Gas Association
Pres.—R. S. Brunner, Indiana Gas Utilities Co., Richmond, Ind.
Sec.-Tr.—P. A. McLeod, New Castle, Ind.

Michigan Gas Association
Pres.—J. E. Spindle, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.

Maryland Utilities Association
Pres.—F. A. Mitchell, Eastern Shore Public Service Co., Salisbury, Md.
Sec.—D. E. Kinnear, 803 Court Square Bldg., Baltimore, Md.

Mid-West Gas Association
Pres.—W. E. Derwent, Geo. D. Roper Corp., Rockford, Ill.
Sec.-Tr.—Roy B. Searing, Sioux City Gas & Electric Co., Sioux City, Iowa.

Missouri Association of Public Utilities
Pres.—A. E. Bettis, Kansas City Power and Light Co., Kansas City, Mo.
Sec.-Tr.—N. R. Beagle, Missouri Power & Light Co., Jefferson City, Mo.
Asst. Sec.—Jesse Blythe, 103 West High St., Jefferson City, Mo.

New England Gas Association
Pres.—H. R. Sterrett, New Haven Gas Light Co., New Haven, Conn.
Ex. Sec.—Clark Belden, 41 Mt. Vernon St., Boston, Mass.
Chairman, Operating Div.—H. G. Taylor, Lawrence Gas & Electric Co., Lawrence, Mass.
Sec., Operating Div.—R. S. Carter, Malden & Melrose Gas Light Co., Malden, Mass.
Chairman, Sales Div.—J. J. McKearin, Lowell Gas Light Co., Lowell, Mass.
Sec.-Tr.—R. D. Stuart, Jr., Fall River Gas Works Co., Fall River, Mass.
Chairman, Industrial Div.—C. S. Hilton, The Pawtucket Gas Co., Pawtucket, R. I.
Sec.-Tr., Industrial Div.—W. S. Anderson, Boston, Mass.
Chairman, Accounting Div.—G. S. Lees, New Haven Gas Light Co., New Haven, Conn.
Sec.-Tr., Accounting Div.—C. D. Perkins, Malden & Melrose Gas Light Co., Malden, Mass.
Chairman, Manufacturer Div.—A. M. Slattery, The Hoffman Heater Co., Boston, Mass.
Sec.-Tr., Manufacturers Div.—J. H. McPherson, James B. Clow & Sons, Boston, Mass.

New Jersey Gas Association
Pres.—J. D. Alden, Jersey Central Power & Light Co., Asbury Park, N. J.
Sec.-Tr.—H. E. Cliff, Public Service Electric & Gas Co., Newark, N. J.

Ohio Gas and Oil Men's Association
Pres.—L. K. Langdon, Union Gas & Electric Co., Cincinnati, Ohio.
Sec.-Tr.—Wm. H. Thompson, 811 First National Bank Bldg., Columbus, Ohio.

Oklahoma Utilities Association
Pres.—R. J. Daugherty, The Empire Companies, Bartlesville, Okla.
Mgr.—E. F. McKay, 1020 Petroleum Bldg., Oklahoma City, Okla.

Pacific Coast Gas Association
Pres.—Harry L. Masser, Los Angeles Gas and Electric Corp., Los Angeles, Calif.
Mang. Dir.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.

Pennsylvania Gas Association
Pres.—Lewis W. Heath, Pennsylvania Power & Light Co., Williamsport, Pa.
Sec.-Tr.—Frank W. Lesley, Pennsylvania Gas & Electric Co., York, Pa.

Pennsylvania Natural Gas Men's Association
Pres.—J. French Robinson, Lycoming Natural Gas Co., Pittsburgh, Pa.
Sec.-Tr.—B. H. Smyers, Jr., 435 Sixth Ave., Pittsburgh, Pa.

Southern Gas Association
Pres.—J. J. Brennan, Memphis Power & Light Co., Memphis, Tenn.
Sec.-Tr.—S. L. Drumm, New Orleans Public Service Inc., New Orleans, La.

Southwestern Public Service Association
Pres.—Knox Lee, Southwestern Gas & Electric Co., Marshall, Texas.
Sec.—E. N. Willis, 1801 No. Lamar St., Dallas, Texas.

The Public Utilities Association of Virginia
Pres.—T. Justin Moore, Va. Elec. & Power Co., Richmond, Va.

Wisconsin Utilities Association
Pres.—E. J. Steinberg, The Milwaukee Electric Railway & Light Co., Milwaukee, Wis.
Exec. Sec.—J. N. Cadby, 135 West Wells St., Milwaukee, Wis.

International Gas Conference
AND
Fifteenth Annual Convention
of the American Gas Association
◆
Chicago, Ill.
Week of
September 25, 1933

Personnel Service

SERVICES OFFERED

Gas engineer (35) technically trained, thirteen years operating coal, water and producer gas plants and doing research on coal carbonization and coke utilization. **672.**

Technical manager, superintendent or engineer, with broad experience of twenty years, covering manufactured and natural gas transmission, re-forming, blending, change-over, high- and low-pressure distribution and lay-out. Familiar with brushing up sluggish activity or run down properties of holding company. Sales service and utilization. Aggressive. **674.**

Mechanical and electrical graduate engineer, nine years' miscellaneous public utility and manufacturing experience, embracing design and operation; last four years in design, installation and sales work on gas-operated air conditioners, dehydration and purification units and kindred equipment. Recently in charge of air-conditioning work which included highly original research. **675.**

Industrial gas: Fuel engineer and salesman, with exceptional training and unusually broadening experience, now employed, seeks management of industrial department for large utility or of directing institutional work in heat utilization. **676.**

Successful record of sixteen years in property **management** and sales promotion. Several years in Latin American Countries; speak Spanish and understand customs of those countries. Age 37—married. Available to go anywhere. **677.**

Manufacturer's Agent: Old and established coal and gas range manufacturer, having discontinued gas range manufacture desires agency Metropolitan New York for complete line ranges, combinations, water heaters, other gas appliances. Have complete sales organization, showroom, warehouse, shipping and servicing facilities. Valuable utility contacts including jobbers, dealers and real estate operators. **678.**

Heating engineer—experienced in all kinds of house heating equipment, including conversion burners, gas boilers, gas furnaces as applied to gravity and forced air heating, including air conditioning. Capable of handling both sales and engineering. **679.**

Engineer experienced in domestic and industrial house and water heating, domestic appliance sales, air conditioning, can submit plans and achievements in creative or competitive selling ability. Utility and manufacturer experience with large following among dealers and utility companies east of Chicago. Twenty-four years' experience. **681**

Safety engineer, technical graduate, familiar with all phases of utility accident prevention program, compensation, public liability, automobile and fire experience over a period of a few years. Qualified to assist a utility or manufacturer to lower insurance costs through efficient safety work. **682**

Executives attention! With engineering corps reduced to handle routine problems only, why postpone the solution of that special problem involving considerable investigation when you can temporarily employ a thoroughly trained **gas engineer** and executive at present unemployed. Have had sixteen years of operating and engineering experience in responsible positions. **684.**

Manufacturer's agent desires line of gas ranges, coal and gas combinations, heaters, etc., for Metropolitan area, on commission basis. Twelve years' experience selling department stores, furniture stores, hardware and plumbing supply houses. **686.**

Natural gas **sales manager,** technical graduate, with eighteen years' experience in domestic, commercial, industrial and house heating sales, desires employment where future opportunities are good. Experience also includes manufactured gas and electric utility sales, rates, publicity, etc. Has had close contact with all operating and most management problems. **687.**

SERVICES OFFERED

Graduate engineer (42) soundly trained as gas company cadet with wide combination gas and electric company experience, through engineering branches to division manager large organization. National viewpoint, very useful in holding company or as **assistant** to busy executive. Can create and maintain good public relations. **689.**

Manager, aggressive, tactful, twenty years' experience organizing, consolidating, financing, managing public utility properties, improving operating efficiency, supervising construction, designing rates, directing sales organizations, handling commercial and public relations, etc. Trained in business administration, intimate with every corporate detail, can quickly visualize opportunities for development and increase earnings. **690.**

Sales engineer—eight years' continuous experience in domestic refrigeration, last five with manufacturer of gas refrigerator; specialist in training salesmen for gas companies and dealers in actual field work in principal eastern cities. Qualified to assume complete responsibility for manufacturer's sales cooperation with progressive gas utilities, compensation by results. Married. **691.**

Operating and construction **superintendent** with twenty years' experience capable in coal, water and oil gas operation. Competent in cast-iron or steel, low- or high-pressure distribution and transmission. Familiar with shop, service and sales departments. Able to get results. **692.**

Industrial engineer with sound engineering background and many years' experience designing, selling and installing industrial gas equipment. Have been particularly successful in converting large newspaper plants, coffee roasting companies, foundries and heat treating plants from coal to gas. **693.**

Manager experienced in manufactured and natural gas and electricity. Has handled exceptional difficult situations in operating, new business and electric competition and natural gas change-overs. **695.**

Chemical engineer (35). Twelve years' operating experience including six years as superintendent of high pressure synthetic ammonia plant and two years as **superintendent** water gas plant operating mechanical and hand clinkered sets. Married. **696.**

Graduate **engineer** with utility and industrial experience, capable of managing district as well as the industrial engineering where a special industrial department is not warranted or where utility company wishes to economize by consolidating these duties. **697.**

Sales manager. Eighteen years with one utility company plus sales promotion experience with one of the largest gas appliance manufacturers. Outstanding record in merchandising and sales management, experienced in meeting electric competition. Well qualified in building good will. **698.**

Assistant to utility executive. Four years with leading gas magazine as natural gas editor in southwest and south, news editor and advertising copywriter has acquainted me with all departments of gas business and provided a national viewpoint on current problems. University graduate and special student (31). Single, willing to go any place. **699.**

Sales manager. Correspondence invited from company seeking experienced honorable man with successful, broad experience, organizing ability, technical advertising, sales promotion and managerial attributes. College graduate, excellent health, optimist, no objection to travel. **700.**

Salesman (30). Twelve years' diversified successful sales experience, including marketing gas appliances through dealer co-operative plan and survey. Has been very successful in making contacts and closing sales; student of A.G.A. Sales Course. **701.**

Operating or holding company in need of experienced practical and technical **adviser,** capable of correcting plant conditions and operation so as to lower holder costs can secure such a man having fifteen years' plant experience and five years' advisory work with large holding companies. **702.**

SERVICES OFFERED

Salesman—appliances. American. Keen merchandiser. Ten years' experience contacting public utilities, manufacturers, department and chain stores, real estate organizations, jobbers and retailers. Familiar sales promotion and missionary work and sales crews, house to house campaigns. (29) Single. Living Salary. 703.

Sales executive. Over 25 years' experience in sales contacts with utilities for large gas appliance manufacturer. Familiar with sales promotion and distribution. A competent director of personnel. Seeks connection with growing concern. **704.**

A young, but thoroughly seasoned, public utility **executive** well qualified to build industrial, house heating, or commercial **sales** under existing business conditions is immediately available. He is thoroughly familiar with gas industry's problems. Has many workable schemes for load building. Desires permanent position immediately with aggressive utility or appliance manufacturer. **705.**

Eleven years as **salesman,** estimating heating requirements for architects, plumbers, steamfitters, gas companies and retail trade. Also helping gas company sales force in promoting sales of gasteam radiators and Clow Gas Furnaces. **706.**

Direct **factory representative** desires to represent range manufacturer in metropolitan New York and Eastern territory. Long experience and successful record, established contacts among utility companies, wholesale and retail range outlets, department and furniture stores insures wide distribution. Full information on file with Personnel Service or write key **707.**

Natural gas **engineer** (36). Ten years' experience with operating company and management corporation. Specially fitted to handle all engineering problems of a natural gas company from production to distribution. Thoroughly familiar with production engineering, design and valuation. Available on short notice. **708.**

Research engineer, European technical education; four years' experience with leading American manufacturer of gas appliances. Familiar with design, testing, development of water heaters, boilers, furnaces, conversion burners and radiators. Has handled gas utilization laboratory and supervised appliance installations. Desires position in connection with development or sales promotion of gas appliances. **709.**

House heating graduate **engineer:** ten years' practical experience application of gas to house heating manufactured and natural gas covering direct sales to customers, salesmen training and supervision, organization of department for sales, installation and service; development of rates and merchandising. Also industrial, distribution, construction and property management experience. **710.**

NO ADVERTISED VACANCIES!

This does not mean there are no vacancies. Several 1933 "Services Offered" advertisers have received communications from prospective employers; in addition many confidential classification records have been sent out for inspection upon request.

Here is what a gas company executive who lately utilized Personnel Service wrote *"This is to thank you for your kind cooperation in regard to the vacancy we had. A very hearty response proved the value of this medium."*

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